

AD-779 432

KOREAN HEMORRHAGIC FEVER

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Korea University

Prepared for:

Army Research and Development Group  
(Far East)

March 1974

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AD 779 432

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER FE-464A-6	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) KOREAN HEMORRHAGIC FEVER (U)		5. TYPE OF REPORT & PERIOD COVERED Annual Report 9 Dec 72 - 8 Dec 73
		6. PERFORMING ORG. REPORT NUMBER FE-464A-6
7. AUTHOR(s) Ho Wang Lee		8. CONTRACT OR GRANT NUMBER(s) DA-RDRF-S92-544-73-G193
9. PERFORMING ORGANIZATION NAME AND ADDRESS Department of Microbiology College of Medicine, Korea University Seoul, Korea		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS 2N061102B71D 00 135FE
11. CONTROLLING OFFICE NAME AND ADDRESS U.S. Army R&D Group (Far East) APO San Francisco 96343		12. REPORT DATE 22 April 1974
		13. NUMBER OF PAGES 76
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) Same as Block 11		15. SECURITY CLASS. (of this report) Unclassified
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES <div style="border: 1px solid black; padding: 5px; display: inline-block;">Reproduced from best available copy.</div>		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Korean Hemorrhagic Fever Epidemiology Antibodies Rodents Korea <div style="text-align: center; margin-top: 10px;">Reproduced by NATIONAL TECHNICAL INFORMATION SERVICE U.S. Department of Commerce Springfield, VA 22151</div>		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Korean hemorrhagic fever (KHF) occurred for the first time in Korea, 1951, although it had previously been known to both the Japanese and Russians. After the Korean war, the disease has been fixed in the areas of demilitarized zone (DMZ) as an endemic one, and from 100 to 300 cases have been reported every year. The aims of this project are 1) epidemiologic investigation of the disease in the civilian endemic areas, 2) to isolate the causative agent of KHF, 3) to demonstrate specific antibodies of KHF by fluorescent antibody technique. (Cont)		

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The outbreak of patients had been localized in the vicinity of DMZ until 1970 but in 1971 affected the middle districts and in 1972 and 1973 invaded the southern parts of South Korea. The number of patients and the areas of KHF in 1973 were investigated extensively and found there were 478 hospitalized cases with 8% fatality. The number of civilian KHF patients (241 cases) exceeded the number of Army KHF patients (237 cases) for the first time in Korea in 1973 and only one peak in the incidence of the disease was observed in the late fall of 1973. 1,109 field rodents were collected in the endemic areas of KHF within the period of 3 years, the rodents were of 2 orders, 3 families, 9 genera, 9 species and there were 2 species of insectivora. Anatomical characteristics of field rodents were studied for the first time and weight value of organs of normal rodents and rodents yielding unknown agents are described. The study of the seasonal distribution revealed that, in May, June, November and December, the occurrence of field rodents had been high in parallel with the incidence of KHF patients. (Author)

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REPORT No. FE-464A-6 (Annual Report)

GRANT No. DA-RDRF-S92-544-73-G193

DA Project/Task Area/Work Unit No. 2N061102B71D 00 135FE

KOREAN HEMORRHAGIC FEVER

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March 1974

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### Introduction

It was during the Korean war and in the U.S. forces stationed in Yunchun and Chulwon areas that the first case of epidemic hemorrhagic fever was reported in Korea in 1951 (1). Before 1944 this disease had been also reported in Vladivostok (2), and in the boundaries between U.S.S.R. and Manchuria (3, 4, 5, 6). For the epidemiological differences between the cases occurred in Korea and those in U.S.S.R. the disease reported in Korea has been named as Korean hemorrhagic fever (KHF) (7).

The cases of this disease have been continuously reported. By the end of the year 1973, total number of the hospitalized patients reached up to 6,657, the fatality rates hovering about 5-10% (Table 1).

During the Korean war, the occurrence of the KHF patients was confined in the areas adjacent to the 38th parallel, where most of the inhabitants were the military personnel. And until 1969 this disease had been an endemic one in the vicinity of demilitarized zone (DMZ).

But this disease advanced southwards to the whole areas of Kyung-do and Kangwon-do in 1970 (7), to the vicinity of Daejeon in 1971, and to almost all over the South Korea, except Cheju-do, Cheollanam-do and Pusan City, in 1972 (8) and 1973 (Table 5, 6). Since 1971, in our epidemiological investigations the civilian patients have been nearly equal in number to the military personnel (Table 1).

The number of civilian KHF cases (241) exceeded the number of Army KHF cases (237) for the first time in Korea in 1973 and only one peak in the incidence of the disease was observed in the late fall of 1973 (Table 1, 2, 3, 4, 6).

The isolation of the causative agent of this disease has not been successful, so the natural host, the vector, and the transmission of the causative agent are still left in obscurity.

There are many bioepidemiological studies suggesting the field rodents as the possible natural host of this disease (9, 10, 11, 12, 13, 14). But none of these are confirmed yet.

It was reported that the *Calomys callosus*, a reservoir of Bolivian hemorrhagic fever, when infected by virus, has a spleen 10 times larger than that of a normal rodent (15).

In Korea, the collection and classification of the field rodents have been studied (13, 14). But there is no report on the weight measurements of the various organs of the field rodents.

This research was carried out with the purposes as followings;

- 1) to classify field rodents collected from the areas, where civilian patients of KHF had been occurred within the period of 3 years
- 2) to study the relationship between seasonal distribution of field rodents and incidence of KHF patients

- 3) to investigate the normal and abnormal value of the weights of various organs obtained from field rodents

#### Materials and Methods

##### Project areas:

Surveys were carried out in the civilian villages, where many cases of Korean hemorrhagic fever has been reported every year

Four areas, namely Yunchun, Chulwon, Pochun and Paju were surveyed in 1971. And two areas Yunchun and Dongduchun, in 1972 and 1973.

These areas are typical farm villages, located in mountainous districts and surrounded by rice paddy fields, dry fields, streams and mountains.

##### Collection of field rodents:

From the areas described above, the field rodents were collected by traps with several kinds of baits. Before the sunset, the traps were set near the holes of the rodents. The trapped rodents were collected midnight and at 6 o'clock in the next morning, and carried to the laboratory.

##### Classification of field rodents:

The collected field rodents were classified according to the Won's method of classification (17).

##### Anatomical investigations of field rodents:

All trapped rodents were anesthetized in a glass bottle with chloroform, were bled totally by direct cardiac puncture with sterile tuberculin syringe, and then, were autopsied.

After sex differentiation and body weight measurements, from all healthy rodents, cervical lymphnode, spleen, liver and kidney were excised and weighed.

#### Results

##### Distribution of field rodents in the endemic areas of Korean hemorrhagic fever:

Table 7 shows the total number and species of field rodents collected in 1971. All were of 7 species; the majority was *Apodemus agrarius coreae* (83%), followed by *Microtus fortis pelliceus* (8.6%).

The species *Mus musculus yamashinai* and *Rattus norvegicus* are usually found in the human dwellings and can hardly be classified as field rodents. Merely 10 rodents of these species were collected. And it was remarkable that *Crocidura lasiura* a insectivore, occupied 3.4% of the total collected rodents.

In table 8, the total number and species of rodents collected in 1972 are represented. As in 1971, *Apodemus agrarius coreae* ranked the first (74%), *Microtus fortis pelliceus* the second (20%) and *Crocidura lasiura* the third (2%).

Compared with the results of the year 1971, the appearance of *Micromys minutus ussuricus* and *Talpa micrura coreana* in 1972 was a distinguishing feature.

Table 9 indicates the results of the year 1973. 350 rodents were collected and classified. Most of them were *Apodemus agrarius coreae* and *Microtus fortis pelliceus*. The species *Cricidura lasiura* was the third in order, but its total number was as many as 32.

In the results of 3 years (1971 - 1973), it is a common fact that *Apodemus agrarius coreae* is the majority and *Microtus fortis pelliceus* in order. This fact is not variable with the regional difference (namely it was the same in Yunchun, Pochun, Paju and Yangju, etc.).

Seasonal distribution of field rodents collected in the endemic areas of Korean hemorrhagic fever:

In 1971, as shown in table 10, most of the rodents were collected in March, April, May, September, October and November. *Apodemus agrarius coreae* was collected mainly around November, *Microtus fortis pelliceus* in May and *Cricetulus* in October.

Figure 1 demonstrates the comparison, in 1971, between the season-specific incidence of KHF patients and the season-specific occurrence of field rodents. The incidence of KHF patients was high in June and November, and in accordance with this, the occurrence of the field rodents also high in May and November.

Table 11 shows the seasonal distribution of the field rodents in the endemic areas of KHF in 1972. Most of the rodents were collected in March, April, July and November. *Apodemus agrarius coreae* had its top occurrence in late spring and late fall, *Microtus fortis pelliceus* in March and April, *Cricidura lasiura*, being of small number, was collected in May and December.

In figure 2, the seasonal distribution of rodents collected in 1972 is compared with the incidence of KHF patients occurred within the same period. The incidence of KHF patients was high in June and November but the occurrence of rodents did not accord with it.

In 1973, as shown in table 12, rodents were collected mainly in October, November and December.

Figure 3 represents the seasonal comparison, in 1973, between the number of KHF patients and that of collected rodents. In parallel with the occurrence of rodents, the incidence of KHF patients also showed its peak in October and November.

The species and seasonal distributions of field rodents collected in the period of 3 years (1971 - 1973) are demonstrated in table 13 and in table 14, respectively. As shown in table 14, most of the rodents were collected in April (9.0%), May (10%), October (13%) and November (13%). Table 15 shows, most of the KHF patients were hospitalized in June, October, November and December.

In figure 4, the seasonal incidence of KHF patients occurred in 3 years from 1971 to 1973 was compared with the seasonal distribution of field rodent collected within the same period. *Apodemus agrarius coreae* and *Crocidura lasiura* had two peaks, small peak in May and June, large peak in October and November as two incidence peaks of patients in June, small peak, and in November, large peak.

Results of anatomical investigation of normal field rodents and field rodents yielding agent:

Anatomical characteristics of 753 normal *Apodemus agrarius coreae* are summarized in table 16 and details of each autopsied rodent in table 17 and 17-1. The rodents were classified with the criteria of body weights, and their various organs were weighed. There is no distinguishable difference in weights of organs between male rodents and female. But with the difference in body weight, the organs showed great variation in their weights.

Autopsy data of 2 *Apodemus agrarius coreae* yielding unknown agents collected in the endemic areas of KHF in 1972 were presented in table 18. Characterization of these agents will be reported in detail in next report.

To compare weights of various organs of rodent yielding agents with normal *Apodemus agrarius coreae*, it is noteworthy that weight of liver yielding agent was heavier than liver of normal rodent.

Tables 19, 20 and 20-1 show the anatomical characteristics of 151 *Microtus fortis pelliceus*. Any differences in weights of various organs between male rodents and female could not be noticed

Table 21 shows the autopsy data of 11 *Microtus fortis pelliceus* yielding unknown agents collected in the endemic areas of KHF from 1971 to 1973. Spleens of R-72-141, R-72-80, R-73-40 and livers of R-73-40, R-72-77, R-72-127 were almost twice heavier than that of normal.

Tables 22 and 23 are concerned with *Crocidura lasiura* and total number collected for 3 years shows 45 but actually the number should be far more than this figure because a lots of them were discarded in the field since they died so fast in 1971 and 1972. Table 24, 25, 26, 27 and 28 are representing the anatomical characteristics of *Mus musculus yamashinai*, of *Clethrionomys rufocanus regulus*, of *Cricetulus triton nestor*, of *Micromys minutus ussuricus*, and of only one *Talpa micrura coreana*, respectively. In general, there was no remarkable difference, except that kidneys and lymphnodes of female *Clethrionomys rufocanus regulus* weighed more than those of female.

Discussion

It was 50 years ago that epidemic hemorrhagic fever was reported in U.S.S.R. (2), and 23 years have passed since Korean hemorrhagic fever occurred in Korea (1).

Studies of so many Americans and Russians for the isolation of the etiologic agent of this disease resulted in vain and the susceptible animal host or detector system is not found yet. But it is said that, in 1944, in North Manchuria, Japanese experimented this disease with human beings; the inoculation of the early sera, urine (4) and suspensions of mites *Trombicula* (19), into human body successfully reproduced the same disease.

If, as in the cases of arboviruses, viremia comes in incubation period, the isolation of KHF etiologic agent from patients will be very difficult. And if this hemorrhagic disease is a consequence of immunological reactions, the problems will get all the more difficult.

For the first time in Korea, number of hospitalized civilian KHF patients (241) exceeded number of Army KHF patients (237) in 1973 and furthermore, epidemiologic investigation revealed that there was only one large peak in incidence of the disease in the late fall in compare with previous epidemic years those having two peaks, small one in late and early summer and large one in late fall.

There are many studies on the distribution of field rodents in the epidemic areas of KHF (12, 13, 14, 15).

According to Traub et al (12), the field rodents collected in the period of 6 months (from May of 1952 to January of 1953) were of 4 species; *Apodemus agrarius coreae*, *Microtus fortis pelliceus*, *Clethrionomys rufocanus* and *Cricetulus triton nestor*.

But, in 1953, in the studies of Kim and Shin (14), the collected rodents were of 10 genera 11 species. Among 11 species, 3 were house rodents and 8 were field rodents.

In 1967, in the areas where no KHF patients had been reported, Kim and Woo (15) collected field rodents of 6 genera 6 species; *Apodemus agrarius coreae* (82%), *Rattus norvegicus* (8%) and *Cricetulus triton nestor* (5%) in order. Interesting was that *Crocidura lasiura*, as insectivora, occupied 3% and no *Microtus fortis pelliceus* and *Clethrionomys rufocanus regulus* were collected at all.

According to Won (17), the occurrence of *Microtus fortis pelliceus* was confined to Rajin in north Korea and the central areas of DMZ. It seems important that the distribution of *Microtus fortis pelliceus* and Korean giant hamster is in accordance with the early epidemic areas of KHF. *Clethrionomys rufocanus regulus* was found all over the country, Korean giant hamster in Manpo of north Korea, central areas adjacent to 38th parallel, East-seashore and Cheju-do, *Apodemus agrarius coreae* also all over the country but largely in central parts of Korea. And *Crocidura lasiura* was distributed in central parts of this country and Hamkyungbuk-do of north Korea.

Most of the above data except Won's data (15) were obtained mainly in the central parts of this country and after the occurrence of the KHF patients in 1951. To understnad the whole distribution of field rodents, i will be necessary to investigate throughout the country.

In our surveys, the data of 3 years (1971 - 1973) show similarity in the species distribution of field rodents. In 1971, the rodents were of 7 species; *Apodemus agrarius coreae* was the majority (83%), followed by *Microtus fortis pelliceus* (9%) and *Crocidura lasiura* (3.4%). 8 species were collected in 1972; *Apodemus agrarius coreae* occupied 74% of total rodents, *Microtus fortis pelliceus* 20%, and *Crocidura lasiura* 2%. In 1973 the collected rodents were of 6 species; *Apodemus* also ranked the first (70%), *Microtus fortis pelliceus* the second (19%) and *Crocidura lasiura* the third (9%).

Tyson (18) insisted that the main species of rodents in the areas circumfering U.S. forces stationed near the DMZ were the *Mus musculus yamashinai*, *Apodemus agrarius coreae* and *Crocidura lasiura* in order, and the species *Mus musculus yamashinai* should be closely associated with KHF. However this species belongs to house rodents, so it isn't likely a natural host of the etiologic agent of the disease, but cannot be ruled out.

Although the *Crocidura lasiura* is one of the rarest rodents of the world, it has been collected in large number perennially in the endemic areas of KHF. The data in table 22 present only 45 autopsied cases for 3 year period however the number collected should be far more than this figure because the field man discarded a lot of them in the field in 1971 and 1972 since they died so fast after collection in the field. This species will be investigated with special interests in our research.

After total bleeding we excised the organs from normal rodents, weighed them and investigated the significance of the weights of various organs in relation to their body weight. Understanding the normal value of the average weight is a prerequisite for the differentiation of an abnormal organ from a normal one. For the more, if, as in Bolivian hemorrhagic fever, a host infected by virus proves itself to have an organ of an abnormal size, it will be a great success in the study of KHF.

According to the results as shown in tables 18, 21, some of the rodents yielding unknown agents had relatively larger sizes of spleen and liver than normal rodents but not as significant as *Calomys callosus* of Bolivian hemorrhagic fever.

Ectoparasites of field rodents have been investigated and suspected as a vector. But there were only few studies on the seasonal distribution of field rodents. According to our survey, the occurrence of field rodents was high in early summer and late fall, in parallel with the incidence of KHF patients. This fact seems to suggest some relationship of this disease to field rodents.

In Argentine and Bolivian hemorrhagic fever, which are caused by Arenavirus (20), ectoparasites are not regarded as to play a major role as a vector. Also in epidemiological studies of KHF, the general opinion is that the arthropod may not act as a important vector.

Since this disease affects mainly the people handling with grasses and earth in the fields, some unknown causative agent in the excreta of natural hosts can be suspected to intrude into a susceptible person through respiratory path or skin.

Without isolation of etiologic agent, nothing can be concluded with safety. But it is certain that field rodents will be suspected as a natural host of KHF and investigated continuously.

#### Summary

478 hospitalized patients suffered from KHF were recorded and civilian cases (241) exceeded Army cases (237) for the first time in Korea in 1973. Seasonal incidence of KHF patients in 1973 showed only one peak in the late fall.

Within the period of 3 years (1971 - 1973), 1,109 field rodents were collected in the endemic areas of Korean hemorrhagic fever (namely Yunchun, Yangju, Pochun and Paju). The classification, seasonal distribution and anatomical characteristics were investigated.

The results are summarized as follows;

- 1) The collected field rodents were of 2 orders, 3 families, 9 genera, 9 species. There were 2 species of insectivora. The majority was *Apodemus agrarius coreae* (76%), followed by *Microtus fortis pelliceus* (16%), *Crocidura lasiura* (5%) and *Mus musculus yamashinai* (2%).
- 2) The study of the seasonal distribution revealed that, in May, June, November and December, the occurrence of field rodents had been high in parallel with the incidence of KHF patients.
- 3) Anatomical characteristics of field rodents were studied. In accordance with the increase of body weight, the weights of various organs also increased. But there were no difference in the weights of organs between male rodents and female. Livers, spleens and kidneys of some field rodents yielding unknown agents were larger than those of normal rodents.

The weights of normal organs were in the following ranges;

- a) Organs of 753 *Apodemus agrarius coreae*;  
cervical lymphnode: 0.02-0.03 gm, spleen: 0.05-0.3 gm,  
liver: 0.7-3.2 gm, kidney: 0.2-0.6 gm.
- b) Organs of 151 *Microtus fortis pelliceus*;  
cervical lymphnode: 0.02-0.07 gm, spleen: 0.02-0.17 gm,  
liver: 1.3-3.6 gm, kidney: 0.3-0.7 gm.

- c) Organs of 45 *Crocidura lasiura*;  
cervical lymphnode: 0.01-0.02 gm, spleen: 0.07-0.11 gm,  
liver: 0.8-0.9 gm, kidney: 0.2-0.3 gm.
- d) Organs of 19 *Mus musculus yamashinai*;  
cervical lymphnode: 0.01-0.1 gm, spleen: 0.01-0.12 gm,  
liver: 0.4-1.3 gm, kidney: 0.17-0.25 gm.
- e) Organs of 6 *Clethrionomys rufocanus regulus*;  
cervical lymphnode: 0.01-0.07 gm, spleen: 0.05-0.14 gm,  
liver: 1.2-2.0 gm, kidney: 0.37-0.68 gm.
- f) Organs of 6 *Cricetulus triton nestor*;  
cervical lymphnode: 0.02-0.18 gm, spleen: 0.02-0.12 gm,  
liver: 3.0-4.4 gm, kidney: 0.75-0.9 gm.
- g) Organs of 2 *Micromys minutus ussuricus*;  
cervical lymphnode: 0.01 gm, spleen: 0.07-0.08 gm,  
liver: 0.3 gm, kidney: 0.1-0.2 gm.
- h) Organs of 1 *Talpa micrura coreana*;  
cervical lymphnode: 0.02 gm, spleen: 0.2 gm,  
liver: 2.4 gm, kidney: 0.5 gm.

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Table 1

Korean Hemorrhagic Fever in Korea  
(Hospitalized Cases)

Year	US Forces	ROK Army	Korean Civilian
1951	827		
1952	833		
1953	455		
1954	307		19
1955	20		
1956	28	26	
1957	13	21	
1958	15	20	
1959	79	47	
1960	10	185	
1961	27	341	
1962	29	311	
1963	11	257	
1964	22	205	18
1965	99	110	2
1966	36	82	11
1967	31	86	13
1968	28	102	13
1969	9	134	8
1970	13	221	85
1971	2	358	311
1972	0	203	186
1973		237	241
Total	2,804	2,946	907
Fatality	5%	7%	7%

Table 2

Seasonal Incidence of Hospitalized Cases of KHF in 1973  
(ROK Army + Civilian)

Month	No. of Patient	No. of Death
1	12	
2	3	1
3	3	
4	4	1
5	6	
6	10	
7	11	3
8	13	3
9	22	3
10	117	8
11	211	15
12	66	5
Total	478	39

Fatality = 8.2%

Table 3

Seasonal Incidence of Hospitalized Cases of KHF in 1973  
(ROK Army)

Month	No. of Patient	No. of Death
1	3	
2	2	
3	1	
4	3	1
5	2	
6	7	
7	9	2
8	4	1
9	9	
10	61	2
11	93	6
12	43	5
Total	237	17

Fatality = 7.2%

Table 4

Incidence of Hospitalized KHF Cases in 1973  
(ROK Army)

Place	No. of Patient	No. of Death
Yunchun	42	5
Whachun	41	
Paju	36	1
Pochun	33	1
Yangju	27	3
Chulwon	20	3
Koyang	5	
Kimpo	4	
Seoul	4	
Yangku	3	1
Hongchun	3	1
Chunchun	2	
Buchun	2	
Kapyung	2	
Whasung	2	
Uijungbu	2	
Yungchun	1	1
Anyang	1	
Yongin	1	
Yunki	1	1
Daejun	1	
Bongwha	1	
Samchuk	1	
Inje	1	
Soowon	1	
Total	237	17

Fatality = 7.2%

Table 5

Incidence of Hospitalized KHF Cases in 1973  
(ROK Army)

Provinces & City	No. of Patient	No. of Death
Gyeong-Gi-Do	158	10
Gang-Weon-Do	71	5
Seoul	4	
Kyeong-Buk-Do	2	1
Chung-Nam-Do	2	1
Total	237	17

Table 6

Incidence of Hospitalized KHF Cases in 1973  
(Civilian)

Provinces & City Month	Seoul	Gyeong- Gi-Do	Gang- weon-Do	Chung- Buk-Do	Chung- Nam-Do	Gyeong- Buk-Do	Jeon- Buk-Do	Total
1	2	6			1			9
2					1(1)			1(1)
3	1	1						2
4		1						1
5		1		1		2		4
6		1				2		3
7			1		1(1)			2(1)
8		4	1			4(2)		9(2)
9		5(1)	1	5(1)		2(1)		13(3)
10	1	15(1)	8(1)	19(2)	8(1)	5(1)		56(6)
11	1	15(2)	25(1)	46(2)	21(2)	3(2)	1	118(9)
12		1	2	8	10	2		23
Total	5	50(4)	38(2)	79(5)	42(5)	26(6)	1	241(22)

Fatality = 9.1% ( ): No. of Death

Table 7

Total No. of Rodent Collected in the Epidemic Foci of Korean Hemorrhagic Fever  
( 1971, January - December )

Order	Family	Genus & Species	Yunchun (%)	Paju (%)	Pochun (%)	Yangju (%)	Total (%)
Rodentia	Muridae	<i>Apodemus agrarius</i> coreae	124 (80.5)	12 (92.3)	68 (80)	135 (86.5)	339 (83.1)
		<i>Microtus fortis</i> pelliceus	24 (15.6)	0	5 (5.9)	6 (3.8)	35 (8.6)
		<i>Clethrionomys</i> <i>rufocanus regulus</i>	0	0	3 (3.5)	0	3 (0.7)
		<i>Cricetulus tritition</i> nestor	0	0	1 (1.7)	6 (3.8)	7 (1.7)
		<i>Mus musculus</i> <i>yamashinai</i>	2 (1.3)	1 (7.7)	4 (4.7)	1 (0.6)	8 (2.0)
		<i>Rattus norvegicus</i>	0	0	1 (1.2)	1 (0.6)	2 (0.5)
Insectivora	Soricidae	<i>Crocidura lasiura</i>	1 (2.6)	0	3 (3.5)	7 (4.5)	14 (3.4)
Total	2 orders, 2 families, 7 genera, 7 species		154 (100)	13 (100)	85 (100)	156 (100)	408 (100)



Table 8

Total Number of Rodent Collected in the Epidemic Foci of Korean Hemorrhagic Fever (1972, January-December)

Order	Family	Genus & Species	Yunchun (%)	Yangju (%)	Total (%)
Rodentia	Muridae	<i>Apodemus agrarius coreae</i>	126 (64)	133 (85)	259 (73.8)
		<i>Microtus fortis pelliceus</i>	66 (33.8)	6 (3.8)	72 (20.5)
		<i>Mus musculus yamashinai</i>	1 (0.5)	3 (1.9)	4 (1.1)
		<i>Clethrionomys rufocanus regulus</i>	1 (0.5)	3 (1.9)	4 (1.1)
		<i>Micromys minutus ussuriensis</i>		2 (1.0)	2 (0.6)
		<i>Gricetulus tritition nestor</i>		2 (1.0)	2 (0.6)
Insectivora	Soricidae	<i>Crocidura lasiura</i>	1 (0.5)	6 (3.8)	7 (1.9)
	Talpidae	<i>Talpa micrura coreana</i>		1 (0.6)	1 (0.3)
Total	2 orders, 3 families, 8 genera, 8 species		195 (100)	156 (100)	351 (100)

Table 9

Total No. of Rodent Collected in the Epidemic Foci of  
Korean Hemorrhagic Fever (1973, January - December)

Order	Family	Genus & Species	Yungchun (%)	Yangju (%)	Total (%)
Rodentia	Muridae	<i>Apodemus agrarius coreae</i>	171 (63.8)	72 (87.8)	243 (69.4)
		<i>Microtus fortis pelliceus</i>	63 (23.5)	2 (2.4)	65 (18.6)
		<i>Mus musculus yamashinai</i>	7 (2.6)	0	7 (2.0)
		<i>Clethrionomys rufocanus regulus</i>	0	2 (2.4)	2 (0.6)
		<i>Cricetulus tritition nestor</i> (Korean giant hamster)	1 (0.4)	0	1 (0.3)
Insectivora	Soricidae	<i>Crocidura lasiura Thomasi Sowerby</i>	26 (9.7)	6 (7.3)	32 (9.1)
Total	2 orders, 2 families, 6 genera, 6 species		268 (100)	82 (100)	350 (100)

Table 10

Total Number of Rodent Collected in the Epidemic Areas  
of Korean Hemorrhagic Fever in 1971

Species Month	Apodemus agrarius coreae	Microtus fortis pelliceus	Crocidura lasius	Mus musculus yamashinai	Cricetulus tritition nestor	Clethrionomys rufocanus regulus	Rattus norvegicus	Total
January	M 7 10 F 3	3 M 3	1 F 1					M 10 14 F 4
February	M 10 16 F 6	4 M 3 F 1				3 M 2 F 1	1 M 1	M 16 24 F 8
March	M 12 22 F 10	7 M 5 F 2	1 F 1		1 F 1			M 17 31 F 14
April	M 11 26 F 15	2 F 2	2 F 2		1 M 1			M 12 31 F 19
May	M 18 29 F 11	14 M 7 F 7	1 F 1	1 F 1	1 F 1			M 25 46 F 21
June	M 17 24 F 7	3 M 2 F 1						M 19 27 F 8
July	M 1 2 F 1			1 M 1			1 M 1	M 3 4 F 1
August	M 20 35 F 15			5 M 1 F 4				M 21 40 F 19
September	M 8 43 F 35		2 F 2					M 8 45 F 37
October	M 15 38 F 23		7 F 7		3 M 1 F 2			M 16 48 F 32
November	M 5 62 F 57			1 M 1	1 M 1			M 7 64 F 57
December	M 32 32 F 24	2 M 1 F 1						M 1 34 F 33
Total	M 24 339 F 215	35 M 2 F 14	14 F 14	8 M 3 F 5	7 M 3 F 4	3 M 2 F 1	2 M 2	M 55 408 F 253

# SEASONAL INCIDENCE OF PATIENT AND THE NUMBER OF RODENT COLLECTED IN THE EPIDEMIC AREAS OF KOREAN HEMORRHAGIC FEVER FROM JANUARY TO DECEMBER OF 1971

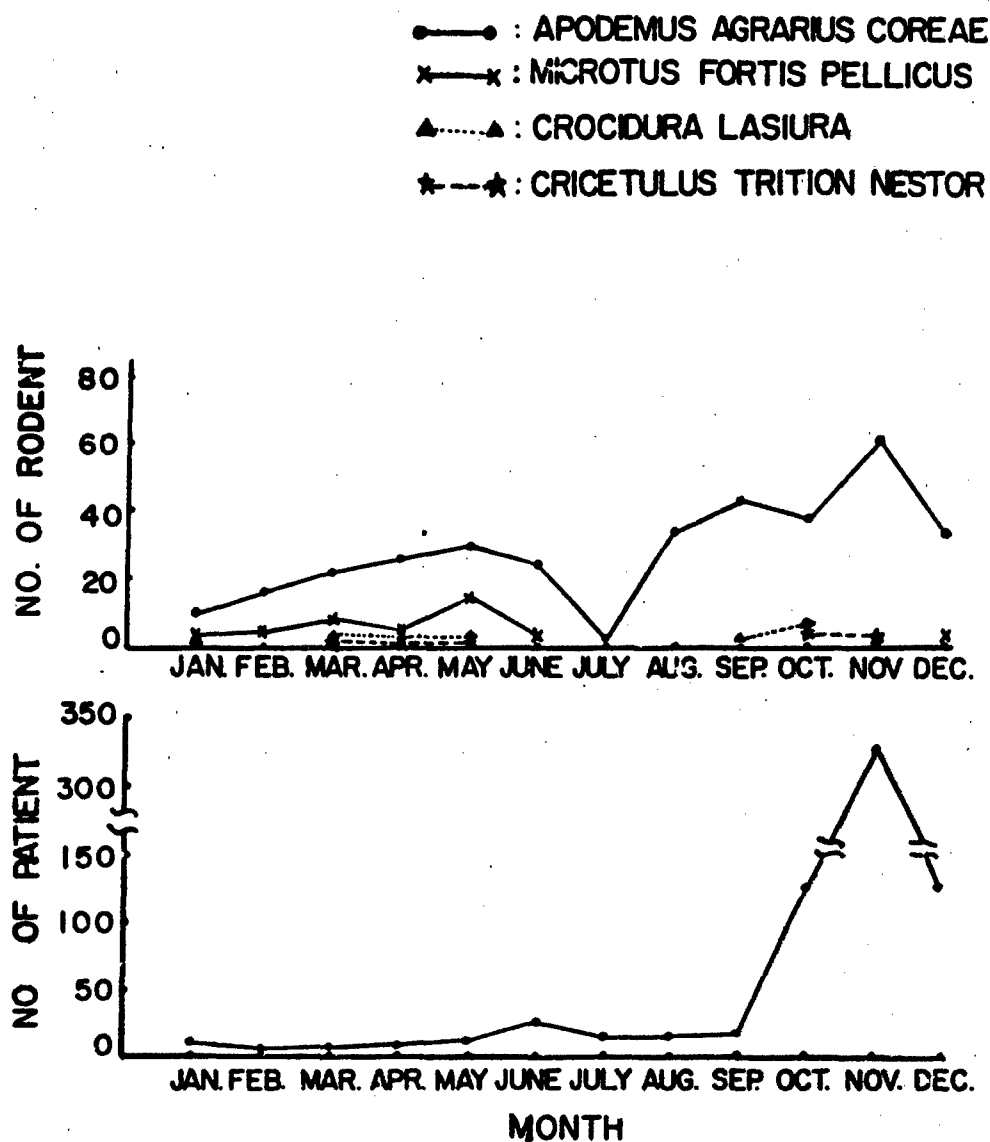


Figure 1

Table 11

Total Number of Rodent Collected in the Epidemic Areas  
of Korean Hemorrhagic Fever in 1972

Species Month	Apodemus agrarius coreae	Microtus fortis pelliceus	Mus musculus yamashinai	Clethrionomys rufocanus regulus	Micromys minutus ussuricus	Cricetulus tritition nestor	Crocidura laslura	Talpa micrura coreana	Total
January	M 5 F 14	M 1 2 F 1							21 M 6 F 15
February	M 9 F 16	M 4		1 M 1			1 F 1		31 M 14 F 17
March	M 8 F 5	M 21 F 1		2 F 2					37 M 29 F 8
April	M 8 F 6	M 3 F 8	1 M 1	1 M 1	2 F 2				39 M 23 F 16
May	M 14 F 7	M 4 F 5					M 2 3 F 1		33 M 20 F 13
June	M 10 F 7	M 1 F 3					1 F 1	1 F 1	23 M 11 F 12
July	M 24 F 15	M 1 F 1				1 M 1			42 M 26 F 16
August	M 11 F 9								20 M 11 F 9
September	M 11 F 13								24 M 11 F 13
October	M 5 F 13		2 M 1 F 1			1 M 1			21 M 7 F 14
November	M 3 F 27	M 6	1 M 1						37 M 10 F 27
December	M 18 F 1	M 1 F 1					M 1 2 F 1		23 M 20 F 3
Total	M 26 F 133	M 52 F 20	M 3 F 1	M 2 F 2	2 F 2	2 M 2	M 3 F 4	1 F 1	351 M 88 F 163

# SEASONAL INCIDENCE OF PATIENT AND THE NUMBER OF RODENT COLLECTED IN THE EPIDEMIC AREAS OF KOREAN HEMORRHAGIC FEVER FROM JANUARY TO DECEMBER OF 1972

●—● : APODEMUS AGRARIUS COREAE  
 ×—× : MICROTUS FORTIS PELLICEUS  
 ▲—▲ : CROCIDURA LASIURA  
 ★—★ : CRICETULUS TRITON NESTOR

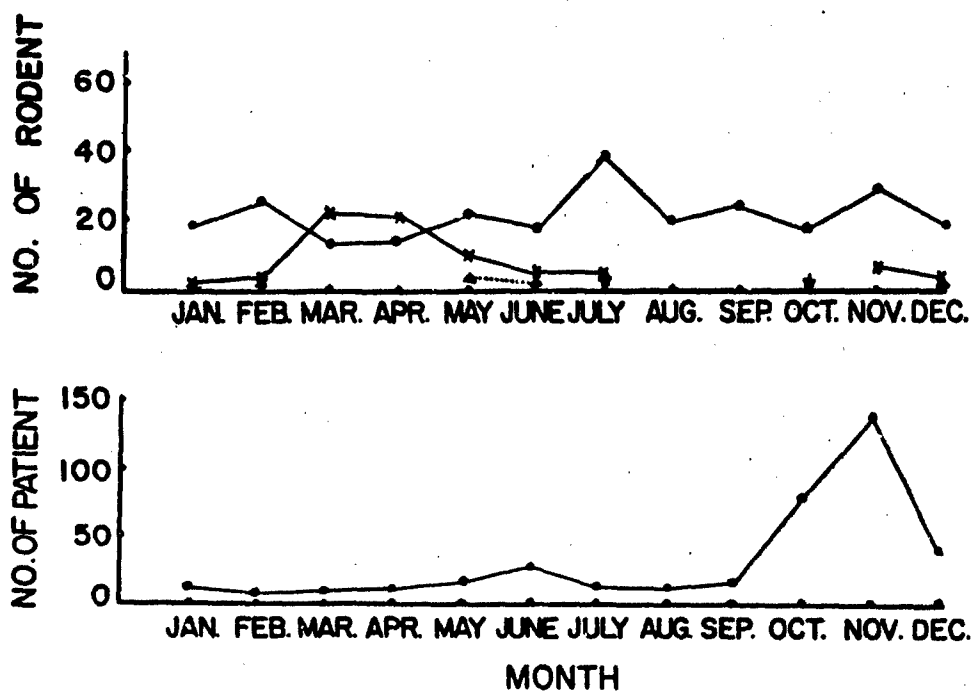


Figure 2

Table 12

Total Number of Rodent Collected in the Epidemic Areas  
of Korean Hemorrhagic Fever in 1973

Species Month	Apodemus agrarius coreae	Microtus fortis pelliceus	Mus musculus yamashinai	Clethrionomys rufocanus regulus	Cricetulus tritition nestor	Crocidura lasiura	Total
January	M 6 15 P 9	M 9 15 P 6				2 P 2	M 15 32 P 17
February	M 3 9 P 6	M 4 5 P 1					M 7 14 P 7
March	M 13 27 P 14	M 3 3	1 P 1				M 16 31 P 15
April	M 13 24 P 11	M 1 4 P 3		M 1 2 P 1			M 15 30 P 15
May	M 15 28 P 13		1 M 1		1 P 1		M 16 30 P 14
June	M 7 15 P 8					M 1 3 P 2	M 8 18 P 10
July	M 8 17 P 9					3 P 3	M 8 20 P 12
September	M 7 19 P 12					M 2 5 P 3	M 9 24 P 15
October	M 22 43 P 21	M 6 10 P 4	M 1 5 P 4			M 3 15 P 12	M 32 73 P 41
November	M 21 34 P 13	M 5 10 P 5				3 P 3	M 26 47 P 21
December	M 10 12 P 2	M 8 18				M 1 1	M 29 31 P 2
Total	M 125 243 P 118	M 46 65 P 19	M 2 7 P 5	M 1 2 P 1	1 P 1	M 7 32 P 25	M 81 350 P 169

# SEASONAL INCIDENCE OF PATIENT AND THE NUMBER OF RODENT COLLECTED IN THE EPIDEMIC AREAS OF KOREAN HEMORRHAGIC FEVER IN 1973

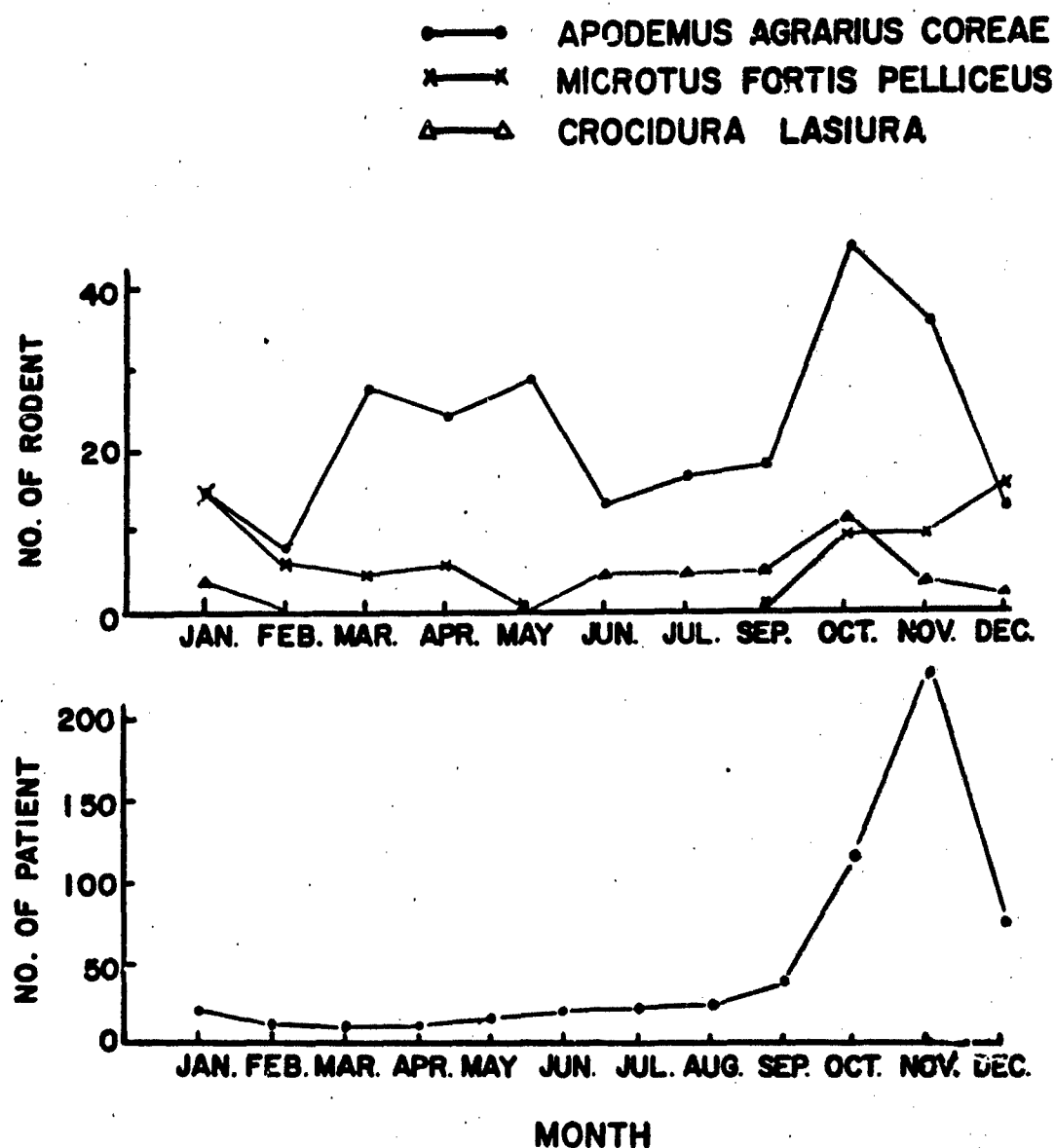


Figure 3



Table 13  
Species and Total Number of Rodent Collected in the Endemic Foci  
of Korean Hemorrhagic Fever from 1971 to 1973

Order	Family	Genus & Species	Endemic Foci				Total (%)
			Yunchun	Paju	Pochun	Yangju	
Rodentia	Muridae	<i>Apodemus agrarius coreae</i>	421	12	68	340	941 (75.8)
		<i>Microtus fortis pelliceus</i>	153	0	5	14	172 (15.5)
		<i>Clethrionomys rufocanus regulus</i>	1	0	3	5	9 (0.8)
		<i>Cricetulus tritition nestor</i>	1	0	1	8	10 (0.9)
		<i>Mus musculus yamashinai</i>	10	1	4	4	19 (1.7)
		<i>Microtus minutus ussuricus</i>	0	0	0	2	2 (0.2)
		<i>Rattus norvegicus</i>	0	0	1	1	2 (0.2)
Insectivora	Soricidae	<i>Crocidura lasiura</i>	31	0	3	19	53 (4.8)
	Talpidae	<i>Talpa micrura coreana</i>	0	0	0	1	1 (0.1)
Total	2 order, 3 families, 9 genera, 9 species		617	13	85	394	1,109 (100)

Table 14  
Seasonal Distribution of Rodent Collected in the Endemic Foci  
of Korean Hemorrhagic Fever from 1971 to 1973

Species Month	Apodemus agrarius coreae	Microtus fortis pelliceus	Clethrionomys rufocanus regulus	Cricetus tritton nestor	Mus musculus yamashinai	Microtus minutus ussuricus	Pattus norvegicus	Cricetus duralasiura	Talpa micrura coreana	Total (%)
January	44	20	0	0	0	0	0	3	0	67 (6.0)
February	50	13	4	0	0	0	1	1	0	69 (6.2)
March	62	32	2	1	1	0	0	1	0	99 (8.9)
April	64	27	3	1	1	2	0	2	0	100 (9.0)
May	78	23	0	2	2	0	0	4	0	109 (9.8)
June	56	7	0	0	0	0	0	4	1	68 (6.1)
July	58	2	0	1	1	0	1	3	0	66 (6.0)
August	55	0	0	0	5	0	0	0	0	60 (5.4)
September	86	0	0	0	0	0	0	7	0	93 (8.4)
October	99	10	0	4	7	0	0	22	0	142 (12.8)
November	126	16	0	1	2	0	0	3	0	148 (13.3)
December	63	22	0	0	0	0	0	3	0	88 (7.9)
Total	841	172	9	10	19	2	2	53	1	1,109 (100)

Table 15

Total No. & Seasonal Incidence of Hospitalized Cases  
of Korean Hemorrhagic Fever from 1971 to 1973 in Korea

Month Year	1	2	3	4	5	6	7	8	9	10	11	12
1971	7	1	2	4	10	23	12	14	18	125	324	129
1972	15	5	5	12	17	27	16	10	18	80	142	42
1973	12	3	3	4	6	10	11	13	22	117	211	66
Total	34	9	10	20	33	60	39	37	58	322	677	237

# SEASONAL INCIDENCE OF PATIENT AND THE NUMBER OF RODENT COLLECTED IN THE EPIDEMIC AREAS OF KOREAN HEMORRHAGIC FEVER FOR 3 YEARS FROM 1971 TO 1973

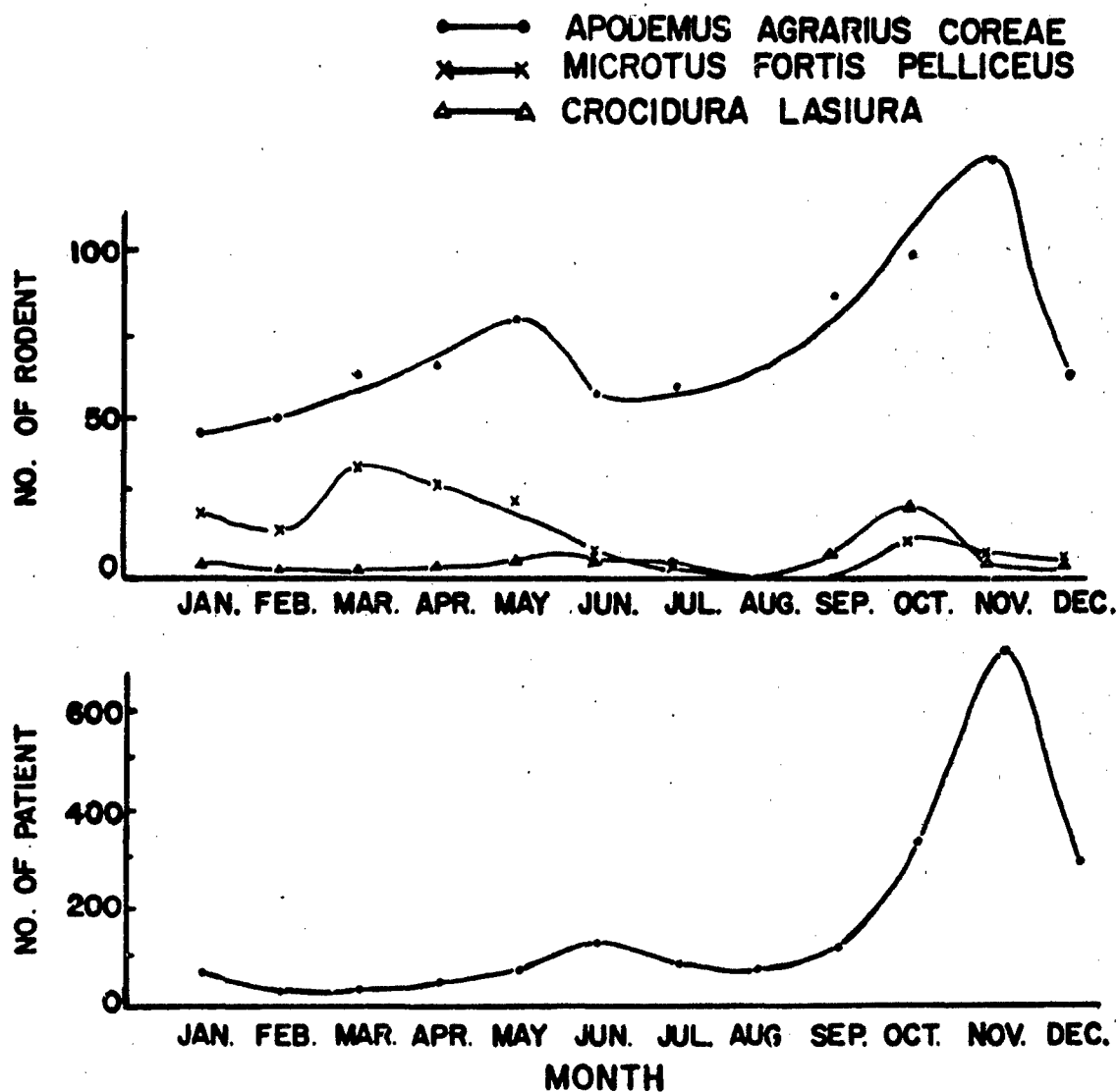


Figure 4

Table 16

Summary of Autopsy Data, *Apodemus Agrarius Coreae*  
from January 1971 to December 1973

( Total 753 )

Body weight (g)		Sex	No. of rodent	Average weight of organs			
Range	Average			Maxillary lymphnodes	Spleen	Liver	Kidney
8 - 14	12.5	M	14	0.02	0.03	0.69	0.23
	12.2	F	21	0.03	0.07	0.97	0.22
15 - 25	20.5	M	86	0.02	0.07	1.21	0.32
	19.5	F	277	0.03	0.08	1.21	0.28
26 - 35	31.0	M	129	0.03	0.09	1.53	0.35
	32.0	F	123	0.03	0.11	1.60	0.39
36 - 48	40.0	M	81	0.03	0.14	1.71	0.44
	38.2	F	21	0.03	0.11	1.70	0.45
49 +	50.0	M	1	0.02	0.3	3.27	0.64

Table 17

Autopsy Data of Apodemus Agrarius Coreae  
Collected in the Hyperendemic Areas of  
KHF from January 1971 to March 1973

Body Weight 8 - 14g

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-71-194	13	M	0.02	0.03	0.65	0.2
R-71-279	13	M	0.05	0.02	0.52	0.17
R-72-164	14	M	0.02	0.12	0.87	0.32
R-72-167	10	M	0.01	0.03	0.67	0.18
Average (4)	12.5g		0.03g	0.05g	0.68g	0.22g
R-71-109	14	F	0.08	0.1	1.13	0.17
R-71-219	10	F	0.03	0.01	1.48	0.2
R-71-220	14	F	0.07	0.05	1.15	0.25
R-71-227	14	F	0.03	0.02	1.95	0.23
R-71-229	13	F	0.02	0.02	0.52	0.13
R-71-238	13	F	0.05	0.05	1.23	0.17
R-71-292	14	F	0.05	0.05	0.62	0.21
R-71-340	13	F	0.01	0.02	0.83	0.19
R-71-354	13	F	0.02	0.05	0.81	0.14
R-71-355	12	F	0.01	0.04	0.84	0.17
R-71-408	14	F	0.02	0.01	1.23	0.21
R-72-163	14	F	0.01	0.05	0.86	0.25
R-72-165	10	F	0.01	0.23	0.65	0.18
R-72-166	8	F	0.02	0.02	0.63	0.18
R-72-187	10	F	0.01	0.03	0.65	0.18
R-72-274	10	F	0.01	0.12	0.65	0.33
R-72-300	13	F	0.01	0.12	0.74	0.35
R-72-310	14	F	0.01	0.02	0.79	0.24
Average (18)	12.4g		0.03g	0.06g	0.93g	0.21g

Body Weight 15 - 25g

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-71-110	25	M	0.05	0.37	2.18	0.32
R-71-305	21	M	0.02	0.12	1.22	0.17
R-71-306	18	M	0.04	0.05	0.87	0.32
R-71-307	20	M	0.07	0.05	0.25	0.29

continued

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-71-335	20	M	0.01	0.02	0.87	0.18
R-71-347	19	M	0.02	0.04	1.16	0.3
R-71-352	16	M	0.05	0.01	0.88	0.29
R-72-6	22	M	0.01	0.07	1.23	0.2
R-72-10	23	M	0.02	0.01	1.49	0.3
R-72-14	19	M	0.01	0.03	1.22	0.3
R-72-18	22	M	0.02	0.05	1.15	0.25
R-72-235	25	M	0.01	0.05	1.22	0.25
R-72-255	17	M	0.01	0.08	1.04	0.25
R-72-286	20	M	0.02	0.1	1.21	0.4
R-72-287	22	M	0.01	0.1	1.32	0.45
R-72-289	25	M	0.01	0.12	1.36	0.35
R-72-290	20	M	0.01	0.07	1.25	0.35
R-72-291	19	M	0.01	0.09	0.89	0.35
R-72-294	25	M	0.01	0.03	1.35	0.33
R-72-73	23	M	0.02	0.1	1.16	0.38
R-72-74	20	M	0.01	0.05	1.14	0.3
R-72-85	23	M	0.03	0.07	1.22	0.27
R-72-146	15	M	0.01	0.05	0.89	0.28
R-72-149	20	M	0.01	0.12	0.23	0.33
R-72-216	25	M	0.02	0.1	1.28	0.32
R-72-313	20	M	0.01	0.07	1.24	0.2
R-72-324	25	M	0.01	0.07	1.36	0.23
R-72-331	15	M	0.01	0.1	0.89	0.27
R-72-24	20	M	0.05	0.1	1.23	0.27
R-72-32	18	M	0.01	0.01	1.17	0.3
R-72-33	23	M	0.01	0.04	1.32	0.28
R-72-36	16	M	0.02	0.05	0.89	0.2
R-72-38	16	M	0.01	0.03	1.12	0.17
R-72-40	23	M	0.02	0.01	1.43	0.23
R-72-49	25	M	0.02	0.06	1.44	0.4
R-72-55	17	M	0.01	0.04	1.12	0.28
R-72-39	20	M	0.02	0.02	1.21	0.18
R-72-323	20	M	0.01	0.07	1.24	0.2
R-72-324	25	M	0.01	0.07	1.36	0.23
R-720331	15	M	0.01	0.1	0.89	0.27
R-72-334	16	M	0.01	0.1	0.89	0.2
R-73-16	20	M	0.02	0.05	1.2	0.3
R-73-21	25	M	0.03	0.07	1.35	0.3
R-73-22	20	M	0.01	0.06	1.23	0.2
R-73-35	24	M	0.02	0.08	1.5	0.69
R-73-46	20	M	0.1	0.07	1.24	0.3
R-73-51	25	M	0.03	0.1	1.53	0.4

continued

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-73-84	25	M	0.02	0.08	1.53	0.35
R-73-89	17	M	0.01	0.02	1.5	0.22
R-73-104	25	M	0.02	0.08	1.5	0.4
R-73-114	24	M	0.02	0.04	1.51	0.32
R-73-145	25	M	0.01	0.02	1.33	0.3
Average (52)	20.9g		0.02g	0.07g	1.2g	0.29g
R-71-138	19	F	0.02	0.07	1.4	0.02
R-71-143	24	F	0.08	0.08	1.73	0.08
R-71-142	19	F	0.02	0.07	1.08	0.18
R-71-155	18	F	0.02	0.05	1.45	0.2
R-71-156	20	F	0.03	0.08	1.48	0.23
R-71-177	22	F	0.02	0.04	1.15	0.22
R-71-183	16	F	0.02	0.02	0.88	0.23
R-71-185	17	F	0.02	0.03	0.87	0.23
R-71-199	25	F	0.03	0.1	1.9	0.22
R-71-201	22	F	0.02	0.01	1.2	0.3
R-71-210	25	F	0.03	0.05	1.47	0.3
R-71-212	23	F	0.01	0.08	1.42	0.22
R-71-222	17	F	0.02	0.05	2.2	0.48
R-71-230	20	F	0.05	0.1	1.31	0.3
R-71-240	17	F	0.08	0.07	0.86	0.33
R-71-241	19	F	0.05	0.15	1.49	0.2
R-71-246	19	F	0.05	0.15	1.15	0.32
R-71-247	17	F	0.01	0.03	1.95	0.4
R-71-252	20	F	0.2	0.12	1.23	0.29
R-71-254	17	F	0.03	0.01	1.62	0.18
R-71-267	19	F	0.01	0.01	1.5	0.24
R-71-268	17	F	0.05	0.01	1.47	0.2
R-71-271	18	F	0.02	0.03	1.48	0.27
R-71-274	18	F	0.05	0.01	1.45	0.3
R-71-275	17	F	0.01	0.05	1.32	0.28
R-71-276	21	F	0.05	0.05	1.48	0.27
R-71-277	16	F	0.01	0.01	0.89	0.2
R-71-291	18	F	0.01	0.04	0.87	0.22
R-71-296	20	F	0.04	0.11	0.87	0.3
R-71-297	24	F	0.01	0.02	1.82	0.38
R-71-300	20	F	0.05	0.19	1.13	0.32
R-71-301	23	F	0.09	0.05	1.45	0.28
R-71-303	18	F	0.03	0.05	1.52	0.23
R-71-304	20	F	0.02	0.09	0.84	0.25
R-71-309	17	F	0.08	0.07	0.85	0.28
R-71-310	19	F	0.08	0.08	1.09	0.33

continued



Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-71-311	20	F	0.07	0.74	1.49	0.36
R-71-312	15	F	0.01	0.03	0.88	0.3
R-71-313	16	F	0.01	0.07	0.87	0.27
R-71-314	17	F	0.05	0.08	0.89	0.22
R-71-315	17	F	0.02	0.01	2.1	0.22
R-71-316	17	F	0.01	0.01	0.89	0.1
R-71-317	19	F	0.05	0.05	2.23	0.25
R-71-318	25	F	0.07	0.1	2.12	0.52
R-71-319	23	F	0.1	0.15	1.49	0.3
R-71-320	24	F	0.07	0.1	1.47	0.36
R-71-322	20	F	0.01	0.08	1.35	0.3
R-71-325	15	F	0.11	0.18	0.87	0.22
R-71-326	18	F	0.04	0.16	0.89	0.22
R-71-327	20	F	0.11	0.55	1.56	0.26
R-71-328	19	F	0.44	0.01	1.53	0.37
R-71-329	20	F	0.1	0.02	1.47	0.32
R-71-331	16	F	0.05	0.07	1.42	0.28
R-71-332	15	F	0.17	0.13	0.88	0.28
R-71-333	15	F	0.09	0.09	0.87	0.18
R-71-334	22	F	0.11	0.01	1.32	0.6
R-71-336	23	F	0.08	0.08	1.45	0.32
R-71-339	16	F	0.02	0.02	0.85	0.17
R-71-341	15	F	0.03	0.01	0.88	0.25
R-71-342	22	F	0.04	0.05	1.22	0.36
R-71-343	21	F	0.05	0.08	1.2	0.35
R-71-344	19	F	0.02	0.04	1.18	0.25
R-71-346	22	F	0.03	0.08	1.25	0.25
R-71-348	17	F	0.01	0.13	1.15	0.3
R-71-349	17	F	0.05	0.03	1.48	0.25
R-71-351	18	F	0.01	0.05	1.48	0.32
R-71-355	21	F	0.01	0.05	1.25	0.2
R-71-357	18	F	0.05	0.05	0.85	0.3
R-71-358	18	F	0.06	0.03	0.88	0.27
R-71-360	15	F	0.05	0.05	1.46	0.22
R-71-361	20	F	0.04	0.04	1.45	0.22
R-71-363	24	F	0.02	0.04	1.82	0.26
R-71-364	21	F	0.02	0.05	1.49	0.28
R-71-366	20	F	0.04	0.05	1.14	0.32
R-71-368	18	F	0.02	0.04	1.5	0.24
R-71-369	17	F	0.01	0.03	1.48	0.15
R-71-370	19	F	0.1	0.15	1.49	0.25
R-71-371	22	F	0.02	0.05	1.28	0.25
R-71-372	16	F	0.03	0.04	0.87	0.22

continued

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-71-373	16	F	0.01	0.15	0.89	0.28
R-71-374	17	F	0.01	0.02	0.88	0.22
R-71-375	17	F	0.01	0.02	0.89	0.22
R-71-376	16	F	0.01	0.01	1.44	0.19
R-71-377	16	F	0.01	0.05	1.45	0.26
R-71-378	18	F	0.07	0.02	1.48	0.22
R-71-379	17	F	0.07	0.07	1.46	0.31
R-71-380	18	F	0.06	0.01	1.49	0.35
R-71-381	19	F	0.07	0.03	1.47	0.32
R-71-382	19	F	0.05	0.12	1.47	0.3
R-71-383	18	F	0.06	0.17	1.46	0.3
R-71-384	21	F	0.1	0.2	1.45	0.33
R-71-385	21	F	0.03	0.1	1.49	0.45
R-71-386	23	F	0.03	0.05	1.23	0.38
R-71-387	21	F	0.03	0.11	1.48	0.28
R-71-388	18	F	0.07	0.05	1.49	0.23
R-71-392	19	F	0.12	0.07	1.45	0.32
R-71-393	22	F	0.01	0.05	1.22	0.26
R-71-394	17	F	0.01	0.03	0.84	0.28
R-71-395	19	F	0.01	0.05	1.08	0.28
R-71-396	23	F	0.03	0.12	1.26	0.32
R-71-397	21	F	0.02	0.03	1.22	0.32
R-71-398	23	F	0.07	0.07	1.24	0.3
R-71-399	19	F	0.02	0.13	1.21	0.25
R-71-400	18	F	0.05	0.1	0.85	0.28
R-71-404	19	F	0.01	0.02	1.23	0.38
R-71-405	18	F	0.01	0.23	1.07	0.43
R-71-406	23	F	0.01	0.13	1.28	0.28
R-71-407	15	F	0.01	0.02	0.89	0.2
R-71-409	18	F	0.01	0.05	1.43	0.33
R-72-1	18	F	0.01	0.01	1.46	0.22
R-72-2	19	F	0.01	0.01	1.43	0.17
R-72-3	22	F	0.13	0.1	1.73	0.22
R-72-5	19	F	0.1	0.12	1.48	0.25
R-72-7	21	F	0.01	0.07	1.31	0.23
R-72-8	18	F	0.02	0.02	1.95	0.29
R-72-9	23	F	0.01	0.02	1.43	0.26
R-72-13	17	F	0.02	0.04	1.3	0.15
R-72-16	21	F	0.01	0.03	1.24	0.33
R-72-17	18	F	0.02	0.05	0.87	0.25
R-72-19	18	F	0.01	0.05	1.17	0.2
R-72-20	21	F	0.01	0.08	1.23	0.2

continued

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-72-22	18	F	0.01	0.1	1.25	0.2
R-72-23	20	F	0.02	0.1	1.24	0.07
R-72-25	16	F	0.02	0.08	0.88	0.29
R-72-26	17	F	0.03	0.05	0.89	0.35
R-72-27	18	F	0.02	0.05	1.15	0.25
R-72-28	20	F	0.01	0.05	1.31	0.3
R-72-31	17	F	0.02	0.1	1.15	0.28
R-72-34	17	F	0.02	0.03	1.13	0.18
R-72-37	20	F	0.01	0.05	1.42	0.25
R-72-42	24	F	0.02	0.02	1.12	0.18
R-72-46	20	F	0.01	0.05	1.41	0.25
R-72-47	23	F	0.01	0.1	1.42	0.32
R-72-48	18	F	0.03	0.05	1.16	0.2
R-72-52	19	F	0.01	0.03	1.16	0.18
R-72-71	19	F	0.01	0.1	1.12	0.3
R-72-72	19	F	0.01	0.05	1.14	0.3
R-72-75	19	F	0.02	0.09	1.15	0.4
R-72-86	21	F	0.02	0.03	1.25	0.27
R-72-88	23	F	0.01	0.04	1.24	0.3
R-72-93	23	F	0.02	0.02	1.24	0.2
R-72-106	22	F	0.01	0.05	1.3	0.15
R-72-107	23	F	0.02	0.03	1.32	0.3
R-72-147	25	F	0.01	0.18	1.35	0.35
R-72-148	22	F	0.01	0.1	1.18	0.43
R-72-169	16	F	0.01	0.08	1.02	0.28
R-72-178	25	F	0.01	0.1	1.27	0.32
R-72-186	15	F	0.02	0.05	0.86	0.25
R-72-201	19	F	0.02	0.03	0.23	0.2
R-72-208	25	F	0.01	0.2	1.26	0.35
R-72-214	25	F	0.02	0.1	1.47	0.37
R-72-225	25	F	0.02	0.07	1.27	0.32
R-72-229	18	F	0.01	0.02	0.87	0.12
R-72-233	20	F	0.01	0.17	1.23	0.25
R-72-234	19	F	0.01	0.02	0.89	0.26
R-72-243	25	F	0.02	0.1	1.28	0.32
R-72-244	25	F	0.01	0.5	1.27	0.35
R-72-245	25	F	0.01	0.05	1.29	0.25
R-72-253	15	F	0.01	0.1	0.89	0.25
R-72-258	17	F	0.02	0.07	1.05	0.3
R-72-262	20	F	0.01	0.12	0.23	0.27
R-72-265	20	F	0.01	0.15	0.23	0.4
R-72-269	18	F	0.01	0.08	0.89	0.25
R-72-270	17	F	0.1	0.2	0.87	0.3

continued

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-72-271	18	F	0.01	0.12	0.87	0.28
R-72-273	18	F	0.01	0.18	0.9	0.4
R-72-275	17	F	0.01	0.1	0.87	0.37
R-72-276	15	F	0.02	0.12	0.75	0.3
R-72-284	17	F	0.01	0.01	0.86	0.3
R-72-285	18	F	0.01	0.1	0.89	0.3
R-72-288	22	F	0.01	0.05	1.33	0.33
R-72-295	20	F	0.01	0.02	1.24	0.27
R-72-296	18	F	0.02	0.05	0.89	0.24
R-72-297	22	F	0.01	0.05	1.31	0.25
R-72-298	22	F	0.01	0.05	1.32	0.35
R-72-299	17	F	0.01	0.05	0.89	0.25
R-72-301	20	F	0.01	0.13	1.25	0.35
R-72-302	17	F	0.02	0.04	0.87	0.25
R-72-304	20	F	0.01	0.05	1.24	0.24
R-72-305	16	F	0.01	0.02	0.89	0.22
R-72-306	20	F	0.02	0.05	1.26	0.25
R-72-307	18	F	0.01	0.05	0.87	0.25
R-72-308	20	F	0.01	0.05	1.28	0.25
R-72-309	21	F	0.01	0.05	1.26	0.25
R-72-311	18	F	0.02	0.04	0.89	0.24
R-72-312	16	F	0.01	0.04	0.87	0.24
R-72-318	20	F	0.01	0.02	0.23	0.35
R-72-319	16	F	0.01	0.02	0.89	0.15
R-72-320	20	F	0.01	0.07	1.24	0.2
R-72-321	15	F	0.01	0.02	0.89	0.14
R-72-322	25	F	0.01	0.07	1.36	0.23
R-72-323	23	F	0.01	0.06	1.24	0.23
R-72-327	15	F	0.01	0.03	0.89	0.13
R-72-328	20	F	0.01	0.06	1.23	0.2
R-72-330	20	F	0.01	0.13	1.24	0.22
R-72-332	18	F	0.03	0.17	0.89	0.27
R-72-333	16	F	0.01	0.1	0.87	0.27
R-72-337	18	F	0.01	0.22	0.87	0.28
R-72-339	18	F	0.01	0.22	0.89	0.38
R-72-340	22	F	0.01	0.07	1.15	0.3
R-72-341	22	F	0.01	0.07	1.14	0.27
R-72-342	19	F	0.01	0.07	0.86	0.32
R-72-344	18	F	0.01	0.07	0.87	0.23
R-72-346	15	F	0.01	0.02	0.89	0.15
R-72-347	20	F	0.01	0.07	1.25	0.2
R-72-351	20	F	0.01	0.02	1.24	0.19

continued

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-73-7	23	F	0.01	0.02	1.95	0.29
R-73-8	23	F	0.01	0.01	1.48	0.26
R-73-15	21	F	0.02	0.05	1.23	0.3
R-73-18	22	F	0.01	0.01	1.2	0.2
R-73-19	21	F	0.01	0.01	1.21	0.2
R-73-20	23	F	0.03	0.05	1.95	0.27
R-73-23	23	F	0.01	0.05	1.94	0.28
R-73-32	20	F	0.01	0.1	1.23	0.3
R-73-33	17	F	0.02	0.07	0.86	0.3
R-73-34	19	F	0.02	0.06	2.53	0.68
R-73-45	23	F	0.1	0.08	1.25	0.3
R-73-52	20	F	0.01	0.06	1.23	0.2
R-73-53	17	F	0.02	0.07	1.25	0.3
R-73-54	20	F	0.01	0.1	1.3	0.3
R-73-55	17	F	0.02	0.07	1.23	0.2
R-73-56	18	F	0.01	0.06	1.62	0.2
R-73-58	22	F	0.01	0.25	1.2	0.55
R-73-61	25	F	0.01	0.07	1.35	0.23
R-73-63	20	F	0.02	0.12	1.24	0.25
R-73-69	25	F	0.03	0.02	1.32	0.25
R-73-70	22	F	0.02	0.08	1.2	0.33
R-73-71	23	F	0.01	0.1	1.25	0.36
R-73-72	17	F	0.01	0.1	1.24	0.2
R-73-73	23	F	0.02	0.1	1.23	0.38
R-73-82	20	F	0.02	0.07	1.24	0.27
R-73-83	24	F	0.02	0.07	1.53	0.35
R-73-86	22	F	0.02	0.07	1.23	0.3
R-73-79	25	F	0.02	0.12	1.37	0.37
R-73-101	25	F	0.02	0.12	1.35	0.4
R-73-102	20	F	0.01	0.07	1.24	0.3
R-73-113	20	F	0.02	0.07	1.2	0.3
R-73-116	17	F	0.02	0.03	1.22	0.2
R-73-118	23	F	0.02	0.03	1.48	0.25
R-73-125	22	F	0.02	0.08	1.2	0.32
R-73-134	23	F	0.02	0.05	1.25	0.35
R-73-136	25	F	0.02	0.02	1.33	0.3
R-73-95	23	F	0.01	0.12	1.35	0.4
Average (243)	19.6g		0.03g	0.08g	1.23g	0.27g

Body weight 26 - 35r

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-71-105	26	M	0.04	0.13	1.55	0.35
R-71-107	32	M	0.05	0.08	1.9	0.32
R-71-118	28	M	0.03	0.15	1.4	0.47
R-71-119	33	M	0.02	0.1	1.58	0.42
R-71-112	32	M	0.03	0.1	1.33	0.29
R-71-123	32	M	0.1	0.17	2.2	0.43
R-71-124	32	M	0.05	0.13	1.98	0.3
R-71-134	35	M	0.02	0.1	2.12	0.4
R-71-135	28	M	0.05	0.17	1.73	0.32
R-71-136	31	M	0.05	0.27	2.1	0.35
R-71-137	32	M	0.07	0.1	2.55	0.3
R-71-141	28	M	0.02	0.1	1.4	0.27
R-71-153	26	M	0.03	0.05	1.97	0.3
R-71-158	27	M	0.05	0.08	1.7	0.37
R-71-161	28	M	0.02	0.05	1.57	0.4
R-71-170	27	M	0.07	0.12	1.65	0.22
R-71-171	27	M	0.02	0.08	1.55	0.25
R-71-172	31	M	0.02	0.08	1.43	0.27
R-71-128	35	M	0.03	0.1	1.63	0.3
R-71-182	30	M	0.05	0.05	1.15	0.27
R-71-184	34	M	0.1	0.1	1.95	0.43
R-71-189	32	M	0.03	0.08	1.22	0.3
R-71-193	35	M	0.02	0.08	2.3	0.55
R-71-195	30	M	0.02	0.1	1.75	0.65
R-71-196	30	M	0.08	0.1	0.9	0.42
R-71-200	28	M	0.02	0.02	1.1	0.32
R-71-202	32	M	0.03	0.02	1.33	0.4
R-71-203	31	M	0.03	0.02	1.33	0.33
R-71-218	35	M	0.09	0.17	2.2	0.5
R-71-207	35	M	0.02	0.07	1.65	0.37
R-71-213	32	M	0.01	0.05	2.2	0.28
R-71-226	30	M	0.01	0.07	2.21	0.35
R-71-244	30	M	0.01	0.01	1.75	0.58
R-71-245	33	M	0.06	0.07	1.76	0.45
R-71-251	30	M	0.09	0.18	1.24	0.35
R-71-270	28	M	0.05	0.08	1.43	0.4
R-71-280	35	M	0.01	0.23	1.85	0.42
R-71-283	32	M	0.02	0.25	1.23	0.43
R-71-284	27	M	0.02	0.07	1.45	0.35
R-71-289	29	M	0.02	0.05	1.42	0.37
R-71-290	30	M	0.02	0.16	1.92	0.4

continued

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-71-293	29	M	0.02	0.05	1.23	0.35
R-72-21	26	M	0.01	0.03	1.25	0.25
R-72-53	30	M	0.01	0.05	1.62	0.38
R-72-84	27	M	0.03	0.05	1.25	0.38
R-72-87	27	M	0.1	0.1	1.26	0.35
R-72-89	31	M	0.02	0.13	1.52	0.3
R-72-90	31	M	0.03	0.12	1.26	0.3
R-72-92	30	M	0.02	0.15	1.24	0.22
R-72-104	32	M	0.02	0.2	1.62	0.42
R-72-108	31	M	0.01	0.1	1.27	0.35
R-72-109	28	M	0.02	0.06	1.62	0.35
R-72-117	33	M	0.05	0.15	1.62	0.47
R-72-118	35	M	0.05	0.17	1.72	0.43
R-72-120	31	M	0.04	0.13	1.61	0.48
R-72-130	29	M	0.01	0.15	1.43	0.43
R-72-132	32	M	0.06	0.2	1.44	0.37
R-72-136	30	M	0.02	0.02	1.44	0.35
R-72-150	35	M	0.01	0.17	2.42	0.35
R-72-151	30	M	0.01	0.02	0.44	0.35
R-72-160	27	M	0.01	0.01	0.25	0.32
R-72-175	33	M	0.02	0.1	1.59	0.25
R-72-176	32	M	0.03	0.13	1.62	0.43
R-72-177	34	M	0.03	0.13	1.85	0.4
R-72-180	35	M	0.02	0.08	1.43	0.32
R-72-183	35	M	0.02	0.15	1.58	0.35
R-72-192	30	M	0.13	0.18	1.62	0.25
R-72-197	30	M	0.01	0.02	1.44	0.35
R-72-198	35	M	0.01	0.03	1.48	0.45
R-72-212	34	M	0.01	0.12	1.45	0.25
R-72-213	30	M	0.01	0.03	1.47	0.42
R-72-224	35	M	0.02	0.22	1.43	0.4
R-72-226	35	M	0.01	0.12	1.47	0.45
R-72-230	35	M	0.01	0.18	1.42	0.3
R-72-231	35	M	0.02	0.14	1.43	0.35
R-72-238	32	M	0.02	0.03	1.47	0.42
R-72-239	30	M	0.02	0.03	1.45	0.45
R-72-242	32	M	0.02	0.05	1.45	0.37
R-72-246	31	M	0.02	0.02	1.45	0.3
R-72-251	30	M	0.03	0.1	1.35	0.44
R-72-256	30	M	0.03	0.15	1.42	0.55
R-72-259	35	M	0.03	0.26	1.42	0.45
R-72-260	34	M	0.1	0.17	1.59	0.37
R-72-267	27	M	0.01	0.15	1.25	0.32

continued

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-73-9	30	M	0.01	0.05	1.62	0.38
R-73-29	30	M	0.02	0.1	1.4	0.33
R-73-30	34	M	0.02	0.08	1.45	0.4
R-73-31	27	M	0.02	0.1	1.32	0.3
R-73-50	26	M	0.01	0.1	1.52	0.36
R-73-57	33	M	0.02	0.07	1.63	0.35
R-73-60	30	M	0.02	0.08	1.44	0.24
R-73-64	34	M	0.01	0.14	1.47	0.32
R-73-66	35	M	0.02	0.14	1.5	0.35
R-73-74	30	M	0.02	0.13	1.42	0.33
R-73-75	28	M	0.02	0.1	1.48	0.43
R-73-77	33	M	0.02	0.16	1.63	0.33
R-73-90	30	M	0.02	0.12	1.4	0.3
R-73-91	32	M	0.02	0.12	1.4	0.32
R-73-92	30	M	0.02	0.12	1.38	0.3
R-73-97	32	M	0.02	0.12	1.4	0.34
R-73-98	30	M	0.01	0.13	1.5	0.35
R-73-106	30	M	0.06	0.15	1.52	0.33
R-73-107	32	M	0.02	0.02	1.62	0.38
R-73-108	30	M	0.02	0.03	1.42	0.41
R-73-115	35	M	0.02	0.05	1.62	0.35
R-73-119	35	M	0.02	0.14	1.53	0.37
R-73-120	30	M	0.01	0.17	1.49	0.28
R-73-122	32	M	0.02	0.3	1.41	0.43
R-73-123	30	M	0.02	0.27	1.4	0.28
R-73-124	33	M	0.02	0.12	1.42	0.47
R-73-127	33	M	0.02	0.12	1.43	0.47
R-73-129	30	M	0.02	0.12	1.46	0.28
R-73-137	30	M	0.01	0.03	1.42	0.29
R-73-140	35	M	0.02	0.05	1.5	0.35
R-73-142	27	M	0.02	0.03	1.42	0.28
Average (115)	31.1g		0.03g	0.11g	1.53g	0.36g



Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-71-106	28	F	0.03	0.05	1.93	0.28
R-71-114	27	F	0.05	0.13	2.25	0.3
R-71-120	31	F	0.05	0.1	2.58	0.28
R-71-129	26	F	0.05	0.12	1.95	0.27
R-71-139	30	F	0.07	0.13	1.9	0.07
R-71-140	27	F	0.02	0.1	2.05	0.28
R-71-154	27	F	0.03	0.05	1.97	0.3
R-71-159	26	F	0.05	0.07	1.43	0.28
R-71-169	29	F	0.05	0.07	0.29	0.3
R-71-79	29	F	0.08	0.13	1.43	0.37
R-71-174	30	F	0.03	0.05	2.23	0.27
R-71-94	30	F	0.03	0.07	1.02	0.23
R-71-157	34	F	0.05	0.15	2.08	0.32
R-71-99	31	F	0.03	0.08	1.43	0.23
R-71-82	27	F	0.07	0.1	1.33	0.17
R-71-188	26	F	0.03	0.08	1.3	0.25
R-71-204	29	F	0.02	0.02	1.58	0.35
R-71-205	27	F	0.01	0.03	1.48	0.32
R-71-217	26	F	0.01	0.1	1.48	0.33
R-71-211	31	F	0.04	0.1	1.14	0.5
R-71-214	29	F	0.02	0.08	1.47	0.25
R-71-223	32	F	0.02	0.03	1.77	0.46
R-71-224	27	F	0.01	0.05	1.3	0.25
R-71-225	32	F	0.03	0.05	1.42	0.37
R-71-231	34	F	0.07	0.2	2.05	0.45
R-71-233	29	F	0.05	0.27	2.15	0.4
R-71-234	31	F	0.08	0.12	2.12	0.55
R-71-236	26	F	0.01	0.12	1.52	0.6
R-71-237	28	F	0.03	0.02	2.23	0.68
R-71-249	28	F	0.1	0.02	1.76	0.6
R-71-250	34	F	0.03	0.21	1.72	0.52
P-71-256	31	F	0.01	0.1	2.02	0.35
R-71-257	32	F	0.02	0.06	1.22	0.2
P-71-266	34	F	0.02	0.14	1.65	0.5
R-71-281	32	F	0.03	0.05	1.46	0.58
R-71-282	32	F	0.03	0.01	1.32	0.55
R-71-295	33	F	0.02	0.05	1.72	0.4
R-71-302	33	F	0.08	0.04	1.19	0.55
R-71-308	33	F	0.11	0.12	1.41	0.38
R-71-321	27	F	0.01	0.05	1.49	0.47
R-71-323	26	F	0.07	0.17	1.54	0.4

continued

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-71-324	30	F	0.03	0.06	1.85	0.5
R-71-345	28	F	0.03	0.05	1.74	0.38
R-71-350	28	F	0.02	0.08	1.38	0.34
R-71-359	30	F	0.07	0.02	2.11	0.18
R-71-362	27	F	0.11	0.08	1.72	0.42
R-71-365	32	F	0.05	0.11	1.74	0.37
R-71-389	34	F	0.08	0.11	2.64	0.52
R-72-41	28	F	0.01	0.01	1.23	0.33
R-72-105	23	F	0.01	0.1	1.58	0.32
R-72-116	28	F	0.02	0.12	1.24	0.42
R-72-129	35	F	0.05	0.1	1.82	0.42
R-72-131	29	F	0.02	0.15	1.44	0.35
R-72-154	27	F	0.01	0.12	0.23	0.33
R-72-161	32	F	0.01	0.08	1.45	0.42
R-72-181	35	F	0.01	0.15	1.59	0.38
R-72-182	26	F	0.01	0.05	1.22	0.3
R-72-193	27	F	0.01	0.07	1.22	0.47
R-72-199	30	F	0.01	0.02	1.45	0.42
R-72-203	32	F	0.01	0.05	1.45	0.47
R-72-204	27	F	0.01	0.02	1.35	0.35
R-72-205	30	F	0.02	0.02	1.44	0.25
R-72-206	32	F	0.01	0.05	1.45	0.3
R-72-215	29	F	0.02	0.1	1.47	0.37
R-72-237	30	F	0.01	0.05	1.63	0.25
R-72-240	27	F	0.01	0.1	1.29	0.23
R-72-241	30	F	0.01	0.02	1.44	0.25
R-72-247	33	F	0.08	0.1	1.47	0.45
R-72-248	28	F	0.1	0.1	1.24	0.4
R-72-249	35	F	0.03	0.1	1.46	0.4
R-72-252	28	F	0.03	0.15	1.47	0.45
R-72-261	35	F	0.1	0.17	1.58	0.63
R-72-264	30	F	0.01	0.15	1.44	0.47
R-72-268	29	F	0.1	0.1	1.5	0.45
R-72-272	26	F	0.02	0.2	1.24	0.53
R-72-278	33	F	0.01	0.13	1.45	0.45
R-72-279	33	F	0.02	0.15	1.46	0.45
R-72-280	33	F	0.01	0.22	1.47	0.55
R-72-303	30	F	0.02	0.27	1.63	0.58
R-72-326	27	F	0.02	0.08	1.35	0.24
R-72-343	34	F	0.01	0.25	1.45	0.6
R-72-348	32	F	0.02	0.07	1.35	0.4
R-72-449	35	F	0.03	0.13	1.45	0.45

Continued

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-72-350	34	F	0.02	0.12	1.44	0.45
R-73-16	34	F	0.03	0.14	1.65	0.7
R-73-37	27	F	0.02	0.12	1.52	0.6
R-73-38	26	F	0.02	0.12	1.52	0.6
R-73-29	28	F	0.02	0.13	2.23	0.68
R-73-49	33	F	0.01	0.1	1.57	0.35
R-73-76	28	F	0.02	0.13	1.52	0.45
R-73-93	28	F	0.02	0.15	1.45	0.43
R-73-96	30	F	0.02	0.15	1.45	0.4
R-73-100	32	F	0.02	0.12	1.4	0.32
R-73-103	33	F	0.02	0.1	1.57	0.35
R-73-110	31	F	0.02	0.14	1.14	0.43
R-73-111	31	F	0.02	0.12	1.4	0.4
R-73-117	26	F	0.02	0.07	1.51	0.37
R-73-128	28	F	0.02	0.08	1.52	0.35
R-73-132	33	F	0.02	0.02	1.42	0.35
R-73-133	28	F	0.02	0.03	1.4	0.28
R-73-135	27	F	0.02	0.03	1.45	0.27
R-73-143	30	F	0.02	0.03	1.43	0.29
Average (102)	29.9g		0.03g	0.1g	1.61g	0.39

Body weight 36 - 48g

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-71-259	36	M	0.05	0.25	1.46	0.49
R-71-260	37	M	0.03	0.1	1.43	1.42
R-71-261	42	F	0.08	0.15	1.16	0.55
R-71-269	41	M	0.03	0.07	2.1	0.55
R-71-278	44	M	0.03	0.22	2.09	0.53
R-71-294	36	M	0.01	0.17	1.83	0.43
R-71-337	37	F	0.12	0.2	1.78	0.48
R-71-111	38	M	0.07	0.12	2.7	0.4
R-71-150	46	M	0.07	0.1	2.55	0.47
R-71-151	36	M	0.08	0.15	1.97	0.32
R-71-160	45	M	0.15	0.15	2.03	0.35
R-71-262	40	M	0.05	0.15	2.61	0.55

continued

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-71-165	41	M	0.1	0.15	1.82	0.35
R-71-166	40	M	0.02	0.12	2.42	0.3
R-71-167	42	M	0.05	0.12	2.05	0.38
R-71-125	41	M	0.05	0.15	1.97	0.32
R-71-173	40	M	0.02	0.18	2.2	0.43
R-71-144	36	M	0.05	0.2	1.85	0.22
R-71-180	40	M	0.02	0.1	1.75	0.35
R-71-181	40	M	0.05	0.12	1.78	0.37
R-71-186	44	M	0.02	0.1	1.77	0.5
R-71-187	40	M	0.05	0.12	2.05	0.35
R-71-190	47	M	0.15	0.3	2.6	0.53
R-71-191	37	M	0.1	0.13	1.7	0.52
R-71-192	47	M	0.1	0.15	2.78	0.65
R-71-206	47	M	0.02	0.25	1.42	0.4
R-71-228	39	M	0.02	0.08	1.85	0.38
R-72-133	40	M	0.02	0.25	1.52	0.5
R-72-134	37	M	0.03	0.1	1.79	0.48
R-72-135	42	M	0.05	0.15	1.82	0.47
R-72-137	37	M	0.02	0.32	0.45	0.32
R-72-145	37	M	0.02	0.13	1.97	0.48
R-72-153	40	M	0.01	0.12	1.86	0.48
R-72-168	37	M	0.02	0.15	1.76	0.37
R-72-170	46	M	0.02	0.12	2.54	0.57
R-72-179	40	M	0.02	0.07	1.48	0.35
R-72-185	48	M	0.02	0.11	2.53	0.5
R-72-188	37	M	0.02	0.17	2.42	0.35
R-72-191	37	M	0.02	0.1	2.4	0.35
R-72-194	48	M	0.1	0.17	2.56	0.52
R-72-195	42	M	0.04	0.17	1.49	0.43
R-72-196	40	M	0.02	0.02	1.47	0.43
R-72-202	42	M	0.02	0.05	1.52	0.32
R-72-207	36	M	0.02	0.13	1.59	0.3
R-72-211	38	M	0.02	0.03	1.59	0.41
R-72-217	40	M	0.01	0.16	1.49	0.58
R-72-218	40	M	0.01	0.18	1.46	0.4
R-72-221	37	M	0.01	0.33	1.44	0.37
R-72-223	40	M	0.01	0.27	1.44	0.45
R-72-227	40	M	0.01	0.02	1.45	0.4
R-72-228	42	M	0.02	0.12	1.44	0.48
R-72-233	36	M	0.02	0.07	1.43	0.43
R-72-236	45	M	0.02	0.15	2.52	0.42
R-72-250	39	M	0.05	0.1	1.54	0.5

continued

Code No.	body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-72-254	40	M	0.03	0.17	1.49	0.45
R-72-257	35	M	0.02	0.15	1.37	0.45
P-72-263	60	M	0.1	0.2	3.17	0.6
R-72-266	29	M	0.1	0.18	1.24	0.47
R-73-59	40	M	0.01	0.1	1.52	0.25
R-73-60	42	M	0.02	0.08	1.49	0.4
R-73-65	40	M	0.02	0.09	1.63	0.33
R-73-80	37	M	0.02	0.12	1.6	0.35
R-73-96	38	M	0.02	0.1	1.52	0.38
R-73-109	37	M	0.02	0.13	1.6	0.45
R-73-121	36	M	0.02	0.3	1.59	0.45
R-73-130	37	M	0.02	0.14	1.53	0.42
R-73-133	40	M	0.02	0.03	1.59	0.33
R-73-141	36	M	0.02	0.05	1.53	0.4
R-73-144	38	M	0.01	0.13	1.6	0.42
Average (69)	40		0.04g	0.14g	1.81g	0.44g
R-71-239	44	F	0.05	0.08	2.53	0.68
R-71-248	38	F	0.05	0.11	1.73	0.38
R-71-253	36	F	0.05	0.11	1.7	0.52
R-71-258	36	F	0.01	0.01	2.07	0.35
R-71-263	38	F	0.05	0.1	1.42	0.43
R-71-367	41	F	0.03	0.01	2.07	0.54
R-71-113	38	F	0.02	0.13	2.65	0.4
R-71-208	36	F	0.04	0.15	1.33	0.62
R-71-209	36	F	0.05	0.12	1.4	0.65
R-72-15	40	F	0.01	0.05	1.82	0.48
R-72-51	36	F	0.02	0.05	1.46	0.35
R-72-119	37	F	0.02	0.15	1.64	0.47
R-72-152	40	F	0.02	0.	1.52	0.5
R-72-200	39	F	0.01	0.07	1.49	0.52
R-72-277	42	F	0.02	0.14	1.39	0.58
Average (15)	38.5g		0.03g	0.1g	1.75g	0.5g

Table 17-1

Autopsy Data of *Apodemus Agrarius Coreae*  
Collected in the Hyperendemic Areas of KHF  
from April to December 1973

Body Weight 8 - 14g

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-73-226	10	M	0.01	0.01	0.53	0.23
R-73-267	12	"	0.01	0.01	0.52	0.3
R-73-268	10	"	0.01	0.01	0.6	0.2
R-73-269	12	"	0.02	0.01	0.63	0.25
R-73-270	14	"	0.02	0.01	0.64	0.3
R-73-271	12	"	0.02	0.01	0.65	0.25
R-73-282	13	"	0.01	0.03	0.67	0.2
R-73-284	13	"	0.01	0.03	0.67	0.2
R-73-295	14	"	0.02	0.08	1.02	0.2
R-73-350	14	"	0.01	0.03	1.12	0.24
Average (10)	12.4g		0.01g	0.02g	0.7g	0.24g
R-73-197	13	F	0.02	0.1	0.62	0.2
R-73-265	10	"	0.02	0.01	0.62	0.2
R-73-313	14	"	0.02	0.08	1.02	0.23
Average (3)	12g		0.02g	0.06g	0.75g	0.21g

Body Weight 15 - 25g

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-73-205	22	M	0.03	0.15	1.41	0.35
R-73-206	20	"	0.02	0.1	1.28	0.25
R-73-208	18	"	0.02	0.07	0.86	0.3
R-73-209	18	"	0.02	0.09	0.82	0.3
R-73-212	25	"	0.02	0.08	1.5	0.69
R-73-213	18	"	0.02	0.06	1.52	0.68
R-73-245	15	"	0.02	0.02	0.65	0.3
R-73-254	24	"	0.02	0.08	1.2	0.32
R-73-253	17	"	0.02	0.1	1.23	0.3
R-73-277	20	"	0.01	0.05	1.14	0.3

continued

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-73-278	15	M	0.01	0.05	0.86	0.2
R-73-279	18	"	0.01	0.03	1.13	0.32
R-73-280	15	"	0.02	0.05	0.86	0.25
R-73-285	18	"	0.02	0.05	0.89	0.24
R-73-293	23	"	0.02	0.1	1.38	0.35
R-73-294	25	"	0.02	0.1	1.38	0.35
R-73-296	20	"	0.05	0.05	1.3	0.38
R-73-297	21	"	0.05	0.06	1.24	0.38
R-73-298	20	"	0.03	0.07	1.28	0.25
R-73-299	18	"	0.02	0.05	1.3	1.28
R-73-302	21	"	0.05	0.06	1.24	0.18
R-73-303	20	"	0.05	0.05	1.24	0.38
R-73-304	23	"	0.02	0.1	1.38	0.35
R-73-305	21	"	0.03	0.04	1.25	0.38
R-73-306	22	"	0.02	0.05	1.38	0.35
R-73-315	24	"	0.02	0.05	1.28	0.3
R-73-307	20	"	0.05	0.04	1.25	0.35
R-73-322	22	"	0.03	0.06	1.24	0.38
R-73-323	21	"	0.03	0.05	1.23	0.37
R-73-335	20	"	0.02	0.04	1.26	0.4
R-73-336	18	"	0.02	0.05	1.27	0.3
R-73-337	17	"	0.02	0.04	1.27	0.25
R-73-347	22	"	0.02	0.04	1.24	0.3
R-73-349	18	"	0.02	0.05	1.26	0.25
Average (34)	20g		0.02g	0.06g	1.21g	0.36g
R-73-22	20	F	0.01	0.06	1.23	0.2
R-73-154	23	"	0.01	0.08	1.2	0.32
R-73-155	24	"	0.02	0.08	1.3	0.3
R-73-166	18	"	0.01	0.06	1.38	0.2
R-73-168	24	"	0.02	0.08	1.4	0.4
R-73-170	23	"	0.01	0.05	1.25	0.35
R-73-172	20	"	0.01	0.1	1.28	0.35
R-73-179	15	"	0.01	0.1	1.24	0.3
R-73-188	20	"	0.02	0.1	1.28	0.35
R-73-194	15	"	0.02	0.02	0.65	0.25
R-73-195	15	"	0.02	0.02	0.7	0.25
R-73-198	23	"	0.02	0.08	1.2	0.32
R-73-204	17	"	0.01	0.06	1.32	0.2
R-73-211	19	"	0.02	0.06	2.53	0.67
R-73-224	16	"	0.02	0.1	1.23	0.38

continued

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-73-225	17	F	0.02	0.1	1.22	0.3
R-73-226	20	"	0.01	0.07	1.2	0.3
R-73-227	21	"	0.02	0.07	1.12	0.34
R-73-232	20	"	0.02	0.1	1.23	0.27
R-73-233	20	"	0.02	0.12	1.24	0.28
R-73-234	22	"	0.01	0.05	1.3	0.15
R-73-235	22	"	0.02	0.02	1.43	0.23
R-73-236	23	"	0.02	0.01	1.42	0.3
R-73-246	18	"	0.02	0.07	1.32	0.25
R-73-247	20	"	0.02	0.05	1.23	0.25
R-73-272	22	"	0.02	0.01	0.7	0.3
R-73-276	18	"	0.01	0.1	1.12	0.25
R-73-281	16	"	0.01	0.04	0.87	0.3
R-73-286	18	"	0.01	0.05	0.89	0.3
R-73-310	20	"	0.02	0.1	1.29	0.25
R-73-311	20	"	0.01	0.1	1.28	0.24
R-73-314	16	"	0.02	0.05	1.25	0.28
R-73-316	18	"	0.02	0.05	1.26	0.25
R-73-317	17	"	0.02	0.05	1.27	0.25
Average (34)	19.4g		0.02g	0.07g	1.19g	0.29g

Body Weight 26 - 35g

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-73-49	33	M	0.01	0.1	1.57	0.35
R-73-59	30	"	0.02	0.08	1.44	0.24
R-73-81	27	"	0.02	0.08	1.52	0.35
R-73-153	27	"	0.02	0.08	1.35	0.3
R-73-159	27	"	0.02	0.02	1.39	0.23
R-73-164	33	"	0.01	0.13	1.49	0.3
R-73-163	35	"	0.02	0.06	1.52	0.35
R-73-180	35	"	0.02	0.05	1.62	0.4
R-73-183	35	"	0.02	0.05	1.53	0.35
R-73-186	30	"	0.01	0.03	1.43	0.29
R-73-187	27	"	0.01	0.03	1.43	0.28
R-73-191	35	"	0.02	0.06	1.52	0.35
R-73-321	31	"	0.02	0.1	2.1	0.42
R-73-324	28	"	0.06	0.1	2.2	0.43
Average (14)	30.9g		0.02g	0.07g	1.58g	0.33g



Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-73-149	30	F	0.01	0.01	1.3	0.32
R-73-151	32	"	0.01	0.07	1.42	0.24
R-73-152	33	"	0.01	0.1	1.25	0.36
R-73-158	32	"	0.02	0.02	1.32	0.3
R-73-161	34	"	0.05	0.15	1.5	0.43
R-73-163	34	"	0.02	0.28	1.52	0.47
R-73-165	34	"	0.01	0.13	1.49	0.3
R-73-173	28	"	0.02	0.1	1.39	0.35
R-73-181	33	"	0.02	0.13	1.5	0.35
R-73-193	35	"	0.03	0.05	1.53	0.4
R-73-196	35	"	0.03	0.13	1.54	0.42
R-73-210	35	"	0.02	0.12	1.65	0.5
R-73-214	35	"	0.03	0.14	1.47	0.35
R-73-215	30	"	0.02	0.08	1.46	0.24
R-73-228	35	"	0.02	0.1	1.62	0.4
R-73-283	35	"	0.02	0.15	1.58	0.35
R-73-292	30	"	0.07	0.1	2.1	0.42
R-73-308	35	"	0.02	0.12	1.65	0.5
R-73-312	27	"	0.02	0.1	1.4	0.35
R-73-338	30	"	0.02	0.06	1.29	0.4
R-73-348	30	"	0.03	0.1	2.1	0.42
Average (21)	32.5g		0.02g	0.11g	1.53g	0.37g

Body Weight 36 - 48g

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-73-150	42	M	0.02	0.2	1.5	0.25
R-73-150	37	"	0.01	0.12	1.53	0.37
R-73-162	38	"	0.02	0.3	1.56	0.5
R-73-174	37	"	0.01	0.14	1.53	0.42
R-73-175	37	"	0.01	0.12	1.53	0.4
R-73-182	40	"	0.02	0.14	1.59	0.35
R-73-185	40	"	0.02	0.13	1.57	0.35
R-73-203	40	"	0.03	0.27	1.59	0.4
R-73-207	37	"	0.02	0.13	1.53	0.38
R-73-223	43	"	0.02	0.2	1.49	0.42

continued

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-73-248	45	M	0.02	0.12	1.49	0.45
R-73-249	47	"	0.02	0.3	3.25	0.48
Average (12)	40.1g		0.02g	0.18g	1.68g	0.4g
R-73-184	38	F	0.02	0.13	1.53	0.36
R-73-192	38	"	0.03	0.14	1.53	0.42
R-73-199	38	"	0.03	0.15	1.6	0.52
R-73-250	37	"	0.02	0.14	1.42	0.35
R-73-251	37	"	0.02	0.13	1.45	0.32
R-73-252	37	"	0.01	0.12	1.46	0.32
Average (6)	37.5g		0.02g	0.14g	1.5g	0.38g

Body Weight 50g +

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-73-222	50g	M	0.02g	0.3g	3.27g	0.64g

Table 18

Autopsy Data of *Apodemus Agrarius* Corean  
Yielding Agents Collected in the Hyperendemic  
 Areas of KHF from January 1971 to December 1973

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-72-190	15	F	0.01	0.05	0.86	0.28
R-72-189	37	M	0.02	0.04	2.13	0.43
Average (2)	26g		0.02g	0.05g	1.5g	0.36g

Table 19

Summary of Autopsy Data, *Microtus Fortis Pelliceus*  
from January 1971 to December 1973

( Total 151 )

Body weight (g)		Sex	No. of rodent	Average weight of organs			
Range	Average			Maxillary lymph nodes	Spleen	Liver	Kidney
15 - 25	21.9	M	5	0.03	0.02	1.28	0.29
	19.0	F	2	0.02	0.03	1.24	0.3
26 - 35	32.3	M	23	0.03	0.08	1.79	0.45
	33.5	F	4	0.03	0.07	1.90	0.50
36 - 45	42.0	M	28	0.04	0.12	2.38	0.50
	42.0	F	13	0.07	0.11	2.50	0.50
46 - 55	50.1	M	21	0.04	0.11	2.87	0.50
	50.7	F	8	0.03	0.17	2.60	0.55
56 - 70	63.1	M	24	0.07	0.14	3.31	0.66
	61.7	F	15	0.06	0.14	3.30	0.66
71 - 90	78.0	M	5	0.05	0.13	3.57	0.73
	73.0	F	3	0.05	0.14	3.02	0.64

Table 20

Autopsy Data of *Microtus Fortis Pelliceus*  
Collected in the Hyperendemic Areas of  
KHIF from January 1971 to March 1973

Body weight 15 - 25g

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-71-101	24	M	0.1	0.02	0.87	0.3
R-71-115	22	M	0.01	0.03	1.15	0.2
R-71-127	18	M	0.03	0.05	1.3	0.3
Average (3)	21.33		0.05	0.03	1.11	0.27
R-71-121	15	F	0.02	0.03	1.23	0.32
R-73-105	23	F	0.01	0.02	1.25	0.28
Average (2)	19g		0.02g	0.03g	1.24g	0.3g

Body Weight 26 - 35g

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-71-102	30	M	0.15	0.52	1.0	0.62
R-71-116	33	M	0.1	0.15	1.92	0.4
R-71-117	28	M		0.08	1.35	0.4
R-71-104	35	M	0.02	0.08	1.75	0.5
R-72-11	34	M	0.02	0.05	1.76	0.55
R-72-56	34	M	0.03	0.03	1.75	0.4
R-72-57	33	M	0.01	0.02	1.72	0.3
R-72-121	33	M	0.05	0.19	1.64	0.5
R-72-313	32	M	0.02	0.07	1.75	0.4
R-72-329	35	M	0.02	0.12	1.82	0.45
R-73-11	35	M	0.02	0.05	2.6	0.33
R-73-25	28	M	0.02	0.01	1.76	0.43
R-73-26	30	M	0.02	0.1	1.8	0.3
Average (13)	32.3g		0.04g	0.11g	1.74g	0.43g
R-73-27	33	F	0.01	0.13	1.94	0.5
R-73-41	32	F	0.1	0.03	2.6	0.32
R-73-87	30	F	0.02	0.1	2.08	0.47
R-71-390	32	F	0.04	0.1	1.73	0.67
Average (4)	31.75g		0.04g	0.09g	2.09g	0.49g

Body Weight 36 - 45g

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-72-174	45	M	0.02	0.11	2.52	0.5
R-72-293	44	M	0.01	0.08	2.55	0.5
R-72-314	44	M	0.02	0.15	1.78	0.4
R-72-315	44	M	0.05	0.15	1.79	0.4
R-72-317	45	M	0.05	0.15	2.53	0.4
R-73-10	42	M	0.02	0.15	2.9	0.43
R-73-12	39	M	0.02	0.13	2.93	0.4
R-73-24	36	M	0.02	0.12	2.6	0.67
R-73-28	37	M	0.02	0.13	2.61	0.67
R-73-43	42	M	0.1	0.62	2.9	0.45
R-73-67	42	M	0.03	0.1	1.63	0.45
R-71-126	45	M	0.1	0.1	3.2	0.6
R-71-391	37	M	0.05	0.16	2.54	0.85
R-72-35	43	M	0.01	0.05	1.74	0.5
R-72-58	43	M	0.03	0.02	1.75	0.63
R-72-59	45	M	0.01	0.05	1.73	0.48
R-72-60	45	M	0.05	0.12	1.62	0.5
R-72-62	38	M	0.03	0.05	1.7	0.48
R-72-78	40	M	0.08	0.1	3.17	0.53
R-72-94	44	M	0.03	0.08	1.72	0.62
R-72-98	45	M	0.05	0.1	1.6	0.5
Average (21)	42.14 g		0.04 g	0.13 g	2.26 g	0.52 g
R-71-131	40	F	0.02	0.07	2.52	0.48
R-71-132	45	F	0.03	0.13	4.28	0.58
R-71-148	40	F	0.02	0.15	2.55	0.45
R-71-76	43	F	0.07	0.08	2.53	0.48
R-72-12	41	F	0.03	0.08	1.75	0.37
R-72-115	45	F	0.01	0.1	1.73	0.45
R-72-124	40	F	0.13	0.17	1.92	0.65
R-72-125	43	F	0.13	0.2	1.82	0.7
R-72-138	43	F	0.02	0.02	2.53	0.62
R-73-4	40	F	0.03	0.18	2.92	0.48
Average (10)	42 g		0.05 g	0.12 g	2.46 g	0.53 g

Body Weight 46 - 55g

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-71-108	50	M	0.05	0.35	3.45	0.6
R-72-60	47	M	0.01	0.08	2.2	0.47
R-72-63	50	M	0.05	0.27	3.65	0.58
R-72-64	46	M	0.01	0.1	2.2	0.42
R-72-65	49	M	0.01	0.03	2.64	0.4
R-72-66	55	M	0.05	0.05	3.12	0.45
R-72-77	53	M	0.01	0.13	3.25	0.58
R-72-96	48	M	0.02	0.1	1.83	0.6
R-72-97	53	M	0.02	0.12	2.64	0.59
R-72-100	53	M	0.02	0.12	2.67	0.52
R-72-140	49	M	0.03	0.1	2.53	0.45
R-72-142	47	M	0.02	0.12	2.56	0.43
R-72-155	51	M	0.02	0.08	2.53	0.57
R-73-40	52	M	0.1	0.3	3.25	0.65
R-73-44	48	M	0.1	0.12	3.1	0.47
R-73-48	47	M	0.1	0.1	2.9	0.42
R-72-43	50	M	0.02	0.08	2.6	0.7
Average (17)	49.88 g		0.04 g	0.13 g	2.77 g	0.52 g
R-71-146	50	F	0.02	0.05	1.75	0.57
R-71-147	50	F	0.05	0.25	2.53	0.68
R-72-123	47	F	0.1	0.22	1.84	0.72
R-73-2	50	F	0.02	0.18	3.12	0.52
R-73-5	53	F	0.02	0.22	3.25	0.53
Average (5)	50 g		0.04 g	0.18 g	2.5 g	0.6 g

Body Weight 56 - 70g

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-71-133	67	M	0.1	0.12	3.1	0.77
R-71-149	65	M	0.03	0.12	3.3	0.67
R-72-54	60	M	0.01	0.03	2.48	0.55
R-72-69	58	M	0.07	0.15	3.14	0.63
R-72-76	57	M	0.02	0.2	3.14	0.65
R-72-79	58	M	0.02	0.18	3.18	0.67
R-72-95	62	M	0.2	0.15	2.62	0.7

continued

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-72-111	57	M	0.05	0.03	3.17	0.7
R-72-113	64	M	0.03	0.18	3.24	0.68
R-72-114	62	M	0.05	0.1	3.23	0.67
R-72-127	60	M	0.1	0.2	3.64	0.6
R-72-128	60	M	0.2E	0.18	3.52	0.7
R-72-68	70	M	0.12	0.07	3.63	0.65
R-72-70	69	M	0.02	0.29	3.62	0.78
R-73-6	68	M	0.02	0.1	3.63	0.45
R-73-17	65	M	0.03	0.15	3.62	0.68
R-73-42	62	M	0.1	0.12	3.62	0.65
R-73-47	68	M	0.12	0.11	3.64	0.55
R-73-88	66	M	0.02	0.1	3.64	0.62
Average (19)	63.05g		0.07 g	0.14 g	3.32 g	0.65 g
R-72-83	60	F	0.07	0.12	2.49	0.75
R-72-110	57	F	0.1	0.2	3.16	0.65
R-72-112	56	F	0.03	0.1	3.14	0.52
R-72-122	65	F	0.13	0.2	2.64	0.65
R-72-126	57	F	0.1	0.2	3.64	0.6
R-72-139	65	F	0.05	0.03	3.21	0.58
R-72-171	66	F	0.11	0.23	3.25	0.65
R-72-172	65	F	0.1	0.13	3.26	0.55
R-72-220	66	F	0.01	0.19	3.24	0.55
R-72-336	60	F	0.02	0.02	3.23	0.63
R-73-3	58	F	0.02	0.19	3.14	0.7
R-73-80	65	F	0.07	0.13	3.64	0.8
Average (12)	61.67g		0.07 g	0.15g	3.17g	0.65 g

Body Weight 71 - 90g

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-72-44	90	M	0.03	0.18	4.1	1.11
R-72-67	76	M	0.22	0.2	3.69	0.83
R-72-158	76	M	0.04	0.08	2.98	0.75
R-72-219	87	M	0.02	0.05	3.27	0.62
Average (4)	82.25g		0.08g	0.13g	3.51g	0.83g



Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-72-156	72	F	0.05	0.18	3.2	0.83
R-72-173	73	F	0.07	0.2	3.25	0.7
R-73-1	73	F	0.02	0.03	2.61	0.38
Average (3)	72.67g		0.05 g	0.14 g	3.02 g	0.64 g

Table 20-1

Autopsy Data of *Microtus Fortis Pelliceus*  
Collected in the Hyperendemic Areas of KHF  
from April to December 1973

Body Weight 15 - 25g

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-73-256	25	M	0.01	0.01	1.65	0.4
R-73-273	20	"	0.01	0.02	1.25	0.3
Average (2)	22.5g		0.01g	0.02g	1.45g	0.35g

Body Weight 26 - 35g

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-73-255	27	M	0.02	0.01	1.76	0.43
R-73-258	33	"	0.02	0.12	2.6	0.42
R-73-259	27	"	0.02	0.01	1.76	0.43
R-73-261	28	"	0.02	0.01	1.75	0.43
R-73-300	35	"	0.02	0.05	1.76	0.55
R-73-326	35	"	0.02	0.05	1.76	0.52
R-73-334	35	"	0.03	0.06	1.78	0.52
R-73-339	35	"	0.03	0.06	1.78	0.52
R-73-342	34	"	0.02	0.06	1.78	0.52
R-73-345	34	"	0.02	0.05	1.79	0.45
Average (10)	32.3g		0.02g	0.05g	1.85g	0.48g
R-73-274	35g	F	0.02g	0.05g	1.76g	0.55g

Body Weight 36 - 45g

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-73-318	42	M	0.01	0.05	3.1	0.42
R-73-327	43	"	0.02	0.05	3.1	0.45
R-73-340	44	"	0.02	0.05	3.1	0.45
R-73-341	42	"	0.03	0.06	3.2	0.5
R-73-343	40	"	0.03	0.06	1.98	0.45
R-73-344	38	"	0.02	0.04	1.97	0.5
R-73-346	42	"	0.02	0.07	3.1	0.6
Average (7)	41.6g		0.02g	0.05g	2.79g	0.48g
R-73-1	37	F	0.02	0.03	2.61	0.38
R-73-263	45	"	0.1	0.12	3.1	0.47
R-73-289	37	"	0.19	0.09	2	0.5
Average (3)	39.7g		0.1g	0.08g	2.57g	0.45g

Body Weight 46 - 55g

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-73-275	55	M	0.02	0.05	3.12	0.4
R-73-325	53	"	0.04	0.05	3.13	0.5
R-73-330	47	"	0.03	0.07	3.1	0.46
R-73-331	47	"	0.04	0.09	3.14	0.46
Average (4)	50.5g		0.03g	0.07g	3.12g	0.46g
R-73-257	47	F	0.01	0.18	2.68	0.52
R-73-260	54	"	0.02	0.21	2.82	0.58
R-73-319	55	"	0.02	0.05	3.12	0.45
Average (3)	52g		0.02g	0.15g	2.87g	0.52g

Body Weight 56 - 70g

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-73-290	65	M	0.07	0.2	2.95	0.8
R-73-328	65	"	0.03	0.16	3.64	0.75
R-73-329	57	"	0.04	0.05	3.16	0.5
R-73-332	70	"	0.04	0.14	3.66	0.8
R-73-333	62	"	0.06	0.18	2.97	0.8
Average (5)	63.8g		0.05g	0.15g	3.28g	0.73g
R-73-262	58	F	0.02	0.12	3.62	0.64
R-73-291	57	"	0.07	0.1	3.7	0.85
R-73-301	70	"	0.02	0.13	3.64	0.6
Average (3)	61.7g		0.04g	0.12	3.65g	0.7g

Body Weight 71 +

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-73-264	75g	M	0.01g	0.13g	3.65g	0.6g

Table 21

Autopsy Data of *Microtus Fortis Pelliceus*  
Yielding Agents Collected in the Hyperendemic  
 Areas of KHF from January 1971 to December 1973

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-72-99	43	M	0.03	0.15	1.54	0.57
R-72-141	44	F	0.03	0.29	2.52	0.43
R-72-80	45	M	0.03	0.25	2.35	0.65
R-73-40	52	M	0.1	0.3	3.25	0.65
R-72-77	53	M	0.01	0.13	3.25	0.58
R-72-112	57	M	0.05	0.03	3.17	0.7
R-72-127	60	M	0.1	0.2	3.64	0.6
R-72-83	60	F	0.07	0.12	2.49	0.75
R-72-171	66	F	0.11	0.23	3.25	0.65
R-71-133	67	M	0.1	0.12	3.1	0.77
R-73-47	68	M	0.12	0.11	3.64	0.55
Average (11)	55.9g		0.06g	0.17g	2.92g	0.62g

Table 22

Summary of Autopsy Data, *Crocidura lasiura*  
from January 1971 to December 1973

( Total 45 )

Body weight (g)		Sex	No. of rodent	Average weight of organs			
Range	Average			Maxillary lymphnodes	Spleen	Liver	Kidney
5 - 23	16.6	M	10	0.01	0.11	0.93	0.28
	12.1	F	35	0.02	0.07	0.89	0.22

Table 23

Autopsy Data of *Crocidura lasiura*  
 Collected in the Hyperendemic Areas  
 of KHF from January 1971 to December 1973

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-72-144	23	M	0.01	0.47	1.22	0.37
R-72-159	15	"	0.01	0.07	0.89	0.23
R-72-335	10	"	0.01	0.02	0.82	0.13
R-73-139	20	"	0.02	0.15	1.43	0.4
R-73-177	22	"	0.01	0.15	1.42	0.4
R-73-189	17	"	0.01	0.14	1.28	0.25
R-73-216	15	"	0.01	0.02	0.45	0.25
R-73-217	16	"	0.01	0.05	0.75	0.24
R-73-220	15	"	0.01	0.02	0.43	0.24
R-73-320	13	"	0.01	0.03	0.63	0.25
Average (10)	16.6g		0.01g	0.11g	0.93g	0.28g
R-71-145	20	F	0.02	0.05	1.22	0.25
R-71-242	13	"	0.05	0.07	1.02	0.2
R-71-243	10	"	0.03	0.06	1.06	0.11
R-71-272	12	"	0.01	0.08	1.07	0.18
R-71-286	10	"	0.02	0.05	1.02	0.07
R-71-287	12	"	0.02	0.03	1.04	0.22
R-71-288	11	"	0.02	0.06	1.07	0.14
R-71-298	10	"	0.01	0.08	1.05	0.15
R-71-299	12	"	0.05	0.1	1.01	0.18
R-72-29	9	"	0.03	0.15	0.82	0.3
R-72-143	14	"	0.01	0.18	1.02	0.25
R-72-162	13	"	0.03	0.1	0.87	0.35
R-73-13	10	"	0.02	0.03	0.82	0.3
R-73-138	14	"	0.02	0.02	0.65	0.25
R-73-148	11	"	0.01	0.1	0.65	0.26
R-73-156	17	"	0.02	0.02	0.7	0.18
R-73-157	5	"	0.01	0.01	0.4	0.03
R-73-171	20	"	0.01	0.1	1.32	0.35
R-73-176	18	"	0.02	0.16	1.38	0.35
R-73-190	18	"	0.01	0.15	1.42	0.3
R-73-201	6	"	0.01	0.02	0.7	0.18
R-73-202	6	"	0.01	0.02	0.6	0.17
R-73-14	12	"	0.01	0.04	0.85	0.3

continued

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-73-218	18	F	0.01	0.14	1.32	0.25
R-73-219	17	"	0.01	0.14	1.28	0.23
R-73-229	11	"	0.01	0.1	0.65	0.25
R-73-230	10	"	0.01	0.1	0.67	0.24
R-73-231	10	"	0.01	0.1	0.66	0.25
R-73-237	13	"	0.01	0.03	0.63	0.25
R-73-238	14	"	0.01	0.02	0.65	0.2
R-73-239	10	"	0.01	0.02	0.75	0.23
R-73-240	12	"	0.01	0.04	0.85	0.25
R-73-241	12	"	0.01	0.1	0.67	0.24
R-73-288	8	"	0.1	0.05	0.64	0.12
R-73-309	5	"	0.01	0.02	0.7	0.18
Average (35)	12.1g		0.02g	0.07g	0.89g	0.22g



Table 24

Autopsy Data of *Mus Musculus Yamashinai*  
 Collected in the Hyperendemic Areas of  
 KHF from January 1971 to December 1973

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-71-176	11	M	0.05	0.05	0.52	0.2
R-71-198	9	"	0.07	0.1	0.82	0.3
R-71-253	9	"	0.01	0.02	0.42	0.12
R-72-103	10	"	0.1	0.12	0.5	0.21
R-72-282	9	"	0.01	0.01	0.6	0.22
R-72-292	12	"	0.01	0.02	0.65	0.13
R-73-126	10	"	0.01	0.1	1.22	0.17
R-73-242	11	"	0.01	0.1	1.21	0.17
Average (8)	10.1g		0.03g	0.07g	0.74g	0.19g
R-71-130	11	F	0.01	0.05	0.37	0.1
R-71-179	7	"	0.01	0.01	0.15	0.1
R-71-197	6	"	0.03	0.05	0.5	0.2
R-71-215	11	"	0.01	0.06	0.32	0.12
R-71-216	9	"	0.01	0.1	0.4	0.2
R-72-283	13	"	0.01	0.12	0.65	0.22
R-73-68	15	"	0.02	0.1	1.32	0.2
R-73-200	14	"	0.02	0.12	1.34	0.2
R-73-221	13	"	0.01	0.1	1.2	0.2
R-73-243	8	"	0.01	0.01	1.2	0.18
R-73-244	12	"	0.02	0.12	1.3	0.25
Average (11)	10.8g		0.02g	0.08g	0.8g	0.18g

Table 25

Autopsy Data of *Clethrionomys Rufocanus Regulus*  
Collected in the Hyperendemic Areas of KHF  
from January 1971 to December 1973

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-72-30	23	M	0.03	0.05	1.42	0.43
R-72-91	29	"	0.01	0.08	1.27	0.37
R-73-79	30	"	0.02	0.14	2.08	0.48
Average (3)	27.3g		0.02g	0.09g	1.59g	0.43g
R-72-81	22	F	0.01	0.07	1.24	0.68
R-72-82	26	"	0.05	0.05	1.27	0.65
R-73-78	23	"	0.07	0.05	1.84	0.35
Average (3)	23.7g		0.04g	0.06g	1.45g	0.56g

Table 26

Autopsy Data of *Cricetulus Triton Nestor*  
(Korean G. Hamster) Collected in the Hyperendemic  
Areas of KHF from January 1971 to December 1973

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-71-285	55	M	0.02	0.02	4.05	0.82
R-71-338	75	"	0.13	0.07	4.12	0.9
R-72-210	95	"	0.07	0.17	4.19	0.78
R-72-281	75	"	0.18	0.12	2.95	0.75
R-71-264	70	F	0.04	0.1	4.15	0.75
R-71-265	65	"	0.03	0.12	4.37	0.65
Average (6)	72.5g		0.08g	0.1g	3.97g	0.78g

Table 27

Autopsy Data of *Micromys Minutus Ussuricus*  
Collected in the Hyperendemic Areas of  
KHF from January 1971 to December 1973

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-72-101	6 g	F	0.01g	0.07g	0.3g	0.2g
R-72-102	6	F	0.01	0.08	0.32	0.15
Average (2)	6		0.01g	0.08g	0.31g	0.18g

Table 28

Autopsy Data of *Talpa Micrura Coreana*  
Collected in the Hyperendemic Areas  
of KHF from January 1971 to December 1973

Code No.	Body weight	Sex	Maxillary lymphnodes	Spleen	Liver	Kidney
R-72-184	62g	F	0.02g	0.2g	2.38g	0.55g

List of Publications

1. Kwon, C. S., Lim, Y. W. and Lee, H. W.: Studies on ectoparasites of field rodents collected in the endemic areas of Korean hemorrhagic fever, Korea Univ. Med. J., 1973, 10; 817.
2. Kwon, B. S., Lee, S. H. and Lee, H. W.: Studies on a method of rapid test for hepatitis associated antigen and its prevalence in Korea, The Korean J. of Virology, 1973, 3; 39.